CLUSTER EVALUATION

Case study III: Poland Energy Sustainable Infrastructure Operations in Advanced Transition Countries

European Bank
for Reconstruction and Development

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POLAND Energy

SUMMARY

The ABI of Energy in Poland in the period 2011-2019 amounted to over €958m, this represented 77% of SIG ABI in the country. There were 15 Energy operations approved in the period 2011-2019 by the Board of Directors. Integrated Approach to Polish Renewables (IAPR) was approved in 2014, outlining some over-arching transition objectives. Energy projects in Poland were strongly focussed on renewable energy generation, where 12 of the 15 projects were implemented, comprising 71% of investment volume.

EBRD projects in the sector made specific links to Poland's legacy of coal-intensive energy generation and its high carbon footprint inconsistent with EU's climate goals, and to the necessity of achieving binding targets through expanding RE generation. Projects in the State portfolio were complementary to these needs by emphasising the necessary upgrade of the infrastructure for RE connections.

Projects in the sector responded to the identified transition gaps by supporting RE generation with private sector producers and co-financing complementary investments in the electricity grid. Projects also addressed the expansion of competitive markets for GCs and electricity. Policy uncertainty was addressed in ongoing policy dialogue throughout the evaluation period, intensifying after 2016. All projects were in line with the relevant country and sector strategies and the GET approach.

EBRD's financial additionality was weaker in the first half of the evaluation period when Poland experienced strong private investment in the sector. The Bank's role increased in around 2015 due to intensified withdrawal of commercial banks. The main sources of EBRD financial additionality were drawn from the provision of project finance with limited recourse and promoting partial exposure of projects to market risks. With renewed regulatory stability and return of the confidence of private investors the additionality of the Bank in the sector may be diminishing.

Large part of the transition expectations of the operations over the evaluation period stemmed from 'demonstration effects'. The long-standing problematic approach in the monitoring of these effects in the Bank was reflected in this portfolio. The monitoring of the achievement of environmental outcomes is disconnected from their aggregate reporting. Policy dialogue and TC were incorporated in Country strategy priorities for the sector and in the Integrated Approach but reporting on these elements has been inadequate.

Physical implementation of projects was completed largely within expected timelines and budgets. The technical cooperation project planned under the IAPR was mostly cancelled, except for the regulatory TC to facilitate implementation of the new auction based support scheme. The Bank's operations resulted in positive environmental outcomes in the cumulative installed RE capacity, RE electricity produced and corresponding CO2 savings. The Bank contributed to increased private sector participation in RE generation both directly through the co-financing of windfarm projects and indirectly through increasing distributors' capacity for RE connections. The overall objective of market share of state controlled RE production to remain below 20% was however not achieved before the IAPR closure.

There was active policy dialogue conducted throughout the evaluation period, with strengthened focus under IAPR and intensifying after 2016. It contributed to the overall transparency of the new auction system and its successful implementation, and to the reversal of estate tax on windfarms in 2018.

Abbreviations

ABI	Annual Bank Investment
AMI	Annual Mobilised Investment
ATC	Advanced Transition Country
CEB	Central Europe and Baltics
CRR	Capital Resource Review
CSDR	Country Strategy Delivery Review
CSU	Country Strategy Update
ERO	Energy Regulatory Office
ETS	Emission Trading Scheme
EU	European Union
EvD	Evaluation Department (EBRD)
GC	Green Certificates
GET	Green Economy Transition Approach
GHG	Greenhouse Gas
IA	Integrated Approach
IAPR	Integrated Approach to Polish Renewables
NCBI	Net Cumulative Bank Investment
PD	Policy Dialogue
PLN	Polish złoty (currency)
PPA	Power Purchase Agreement
PPO	Priority Policy Objective
RE	Renewable energy
RESS	Renewable energy support system
SCF	Strategic and Capital Framework
SEI	Sustainable Energy Initiative
SIG	Sustainable Infrastructure Group
SIP	Strategy Implementation Plan
TC	Technical Cooperation
TI	Transition Impact
TIMS	Transition Impact Monitoring System
TPV	Total project value
TQ	Transition Quality

1 Portfolio overview

NB: All data in this section originates from DW_Banking_Operational dataset as available on the EBRD Tableau server in June 2020. Analysis by EvD.

In line with the approach to the evaluation outlined in the Approach Paper, this evaluation's time scope comprised the past two strategic periods, the Capital Resource Review (CCR4, 2011-2015) and the first Strategic and Capital Framework (SCF, 2016-2020) until the end of 2019.

1.1 ABI

The **ABI (excl. restructurings) of SIG in Poland in the period 2011-2019 amounted to over €1.25bn**, out of total ABI in Poland over that period of €6.1bn (21%). Within the three SIG subsectors, Energy represented the overwhelming share of SIG ABI. The **ABI of Energy amounted to over €958m**. This represented 77% of SIG ABI in the country, while Transport delivered 20%, and MEI was the smallest subsector with 3% of SIG ABI.

Figure 1: ABI (excl. restructuring) Poland 2011-2019, share of sectors

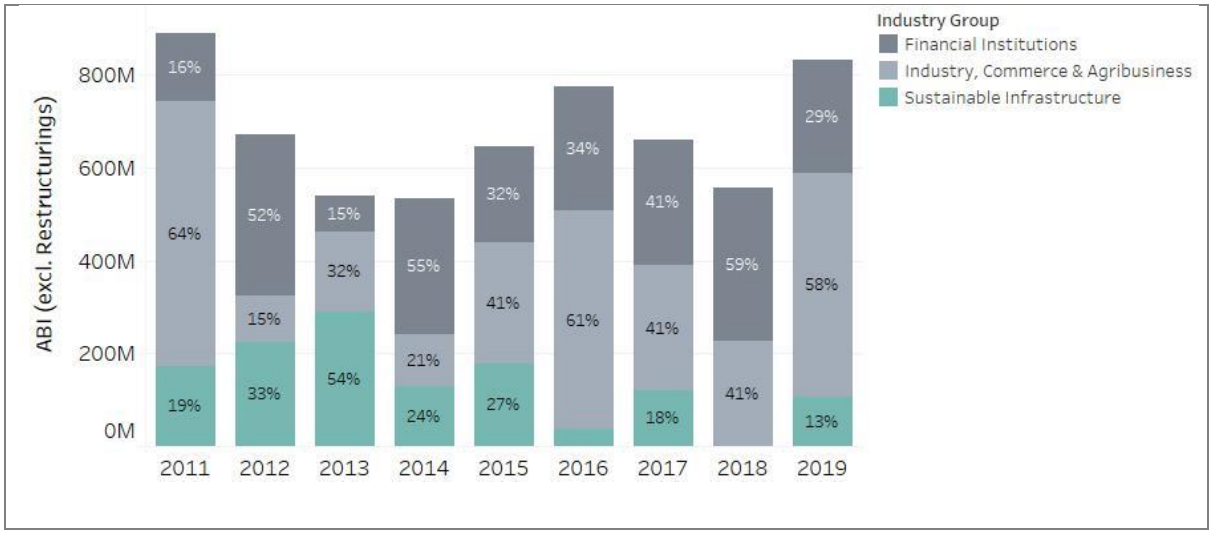
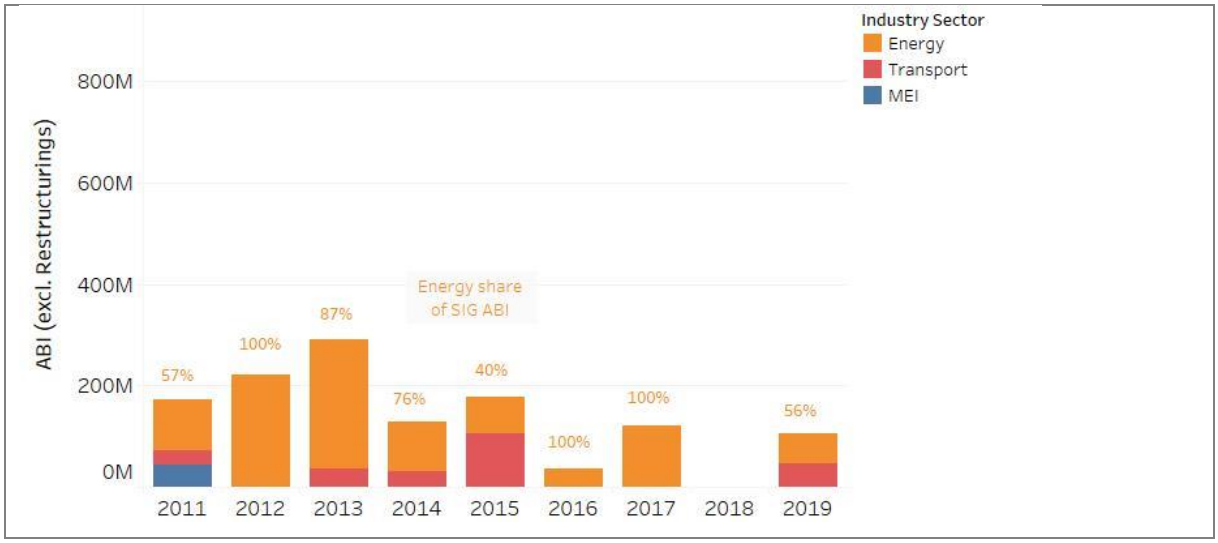


Figure 2: Sustainable Infrastructure ABI (excl. restructuring) Poland 2011-2019, by sub-sectors



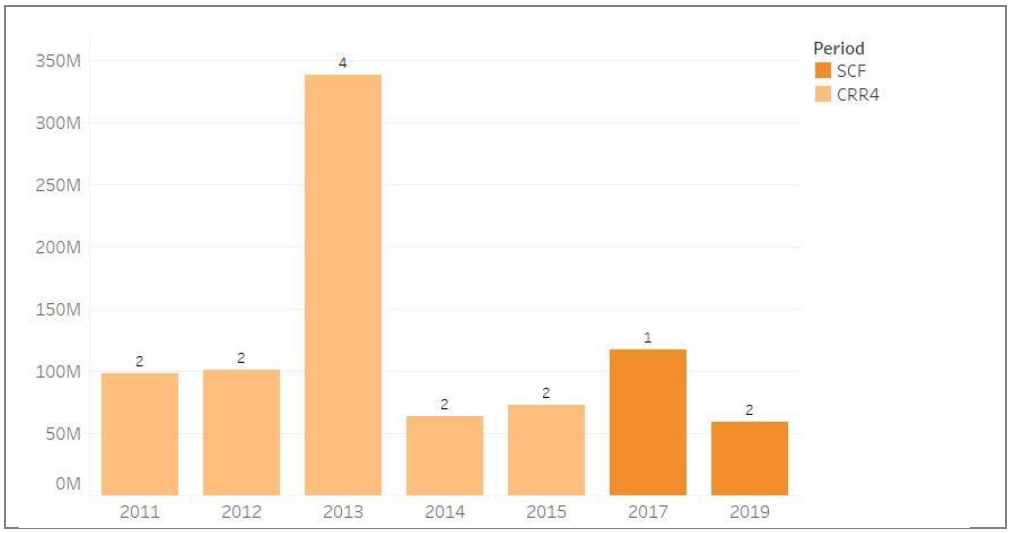
1.2 Investment

There were **15 Energy operations approved in the period 2011-2019** by the Board of Directors. Of these, 12 operations were approved in the first strategic period (2011-2015), and three under SCF by the end of 2019. All operations were approved as stand-alone. Integrated Approach to Polish Renewables (IAPR) was approved in 2014, outlining some over-arching transition objectives, and carrying a package of TC funds to be used in the sector in support of those objectives. Most operations were carried out in the Private portfolio (12 operations, over €600m or 71% of NCBI), while three operations were in State portfolio (almost 30% NCBI).

Table 1: Energy projects in Poland, 2011-2019 (by approval year)

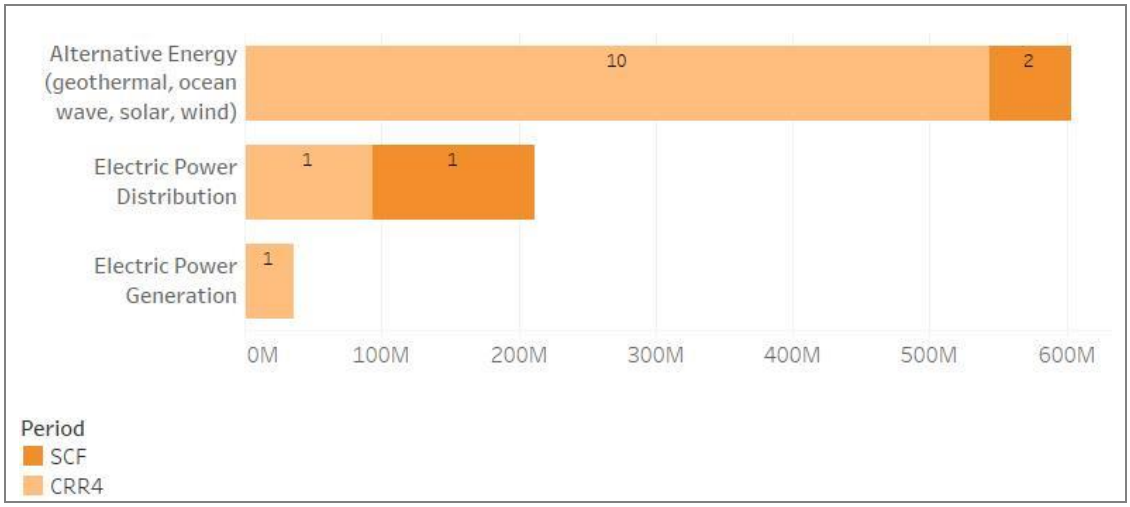
	Year approved	Operation Name	Op Id	Type	Portfolio class	Instrument Type	Sovereign Risk	NCBI (€)	
CRR4	2011	Golice Wind Project	40782	SA	PRIVATE	Debt	Non-Sovereign	18,486,201	
	2011	Patnow II refinancing - Konin Biomass	42240	SA	PRIVATE	Debt	Non-Sovereign	80,000,000	
	2012	EC SW - CCGT	41829	SA	STATE	Debt	Non-Sovereign	35,994,648	
	2012	Kukinia Wind	43819	SA	PRIVATE	Debt	Non-Sovereign	65,085,215	
	2013	Orla Wind Farm	43892	SA	PRIVATE	Debt	Non-Sovereign	21,714,634	
	2013	Pawlowo Wind Farm	44335	SA	PRIVATE	Debt	Non-Sovereign	70,660,594	
	2013	ENERGA smart grid	44527	SA	STATE	Debt	Non-Sovereign	93,901,122	
	2013	PEPSA Wind Portfolio	44923	SA	PRIVATE	Debt	Non-Sovereign	152,296,995	
	2014	*Integrated Approach to Polish Renewables*	*n/a*	*IA*					
	2014	Darlowo Wind	45739	SA	PRIVATE	Debt	Non-Sovereign	41,240,639	
	2014	Radzyn Wind Farm	46645	SA	PRIVATE	Debt	Non-Sovereign	22,147,981	
	2015	Polenergia Wind Portfolio	46962	SA	PRIVATE	Debt	Non-Sovereign	25,678,522	
	2015	Banie Wind Farm	47932	SA	PRIVATE	Debt	Non-Sovereign	46,754,901	
	TOTAL CRR4								**673,961,454**
SCF	2017	Grid Enhancement for Renewables	48064	SA	STATE	Debt	Non-Sovereign	117,376,403	
	2019	Potegowo Wind	50200	SA	PRIVATE	Debt	Non-Sovereign	49,086,812	
	2019	Szymankowo Windfarm	51031	SA	PRIVATE	Debt	Non-Sovereign	9,859,618	
	TOTAL SCF								**176,322,832**
TOTAL									**850,284,286**

Figure 3: Energy NCBI in Poland in €, 2011-2019 (by approval year), number of operations



In terms of sub-sectors, Energy projects in Poland were strongly **focussed on renewable energy generation**, where 12 of the 15 projects were implemented, comprising 71% of NCBI and all of Private portfolio projects. Energy distribution amounted to 25% of NCBI over the period, while the remaining 4% of NCBI went to generation (non-renewables) in one project.

Figure 4: Energy NCBI in Poland, by sub-sector in €, 2011-2019 (by approval year), number of operations



1.3 Technical cooperation

None of the projects in the evaluation portfolio was directly supported by TC funds. However, the Integrated Approach to Polish Renewables was supported by a TC project of €375k (€250k allocated from donor funds), which was split into three assignments. Only one of the assignments was actually implemented, with the budget of €65k.

Table 2: TC assignments related to Energy operations in Poland, 2011-2019

TCRS Project ID	TCRS Assignment ID	Assignment Title	Assignment Type	Committee approved assignment amount (€)	Disbursement Amount (€)
433	1331	Support to build capacity of the electricity regulator under Integrated Approach to Polish Renewables	Capacity building	125,000	n/a
	Assignment 1331 was later changed into assignments 28965 & 28966:				
433	*28965*	*Regulatory TC: Interpretation and Transparency*	*Policy dialogue*	*65,000*	*65,000*
433	*28966*	*Regulatory TC: Regulatory Best Practice*	*Capacity building*	*60,000*	*No disbursement*
433	1332	Support to build capacity of distribution system operators (DSOs) under Integrated Approach to Polish Renewables	Capacity building	250,000 *(based on 50% cost-sharing; 125,000 from donor funds)*	No disbursement
				375,000 (*250,000 from donor funds*)	65,000

1.4 Mobilisation

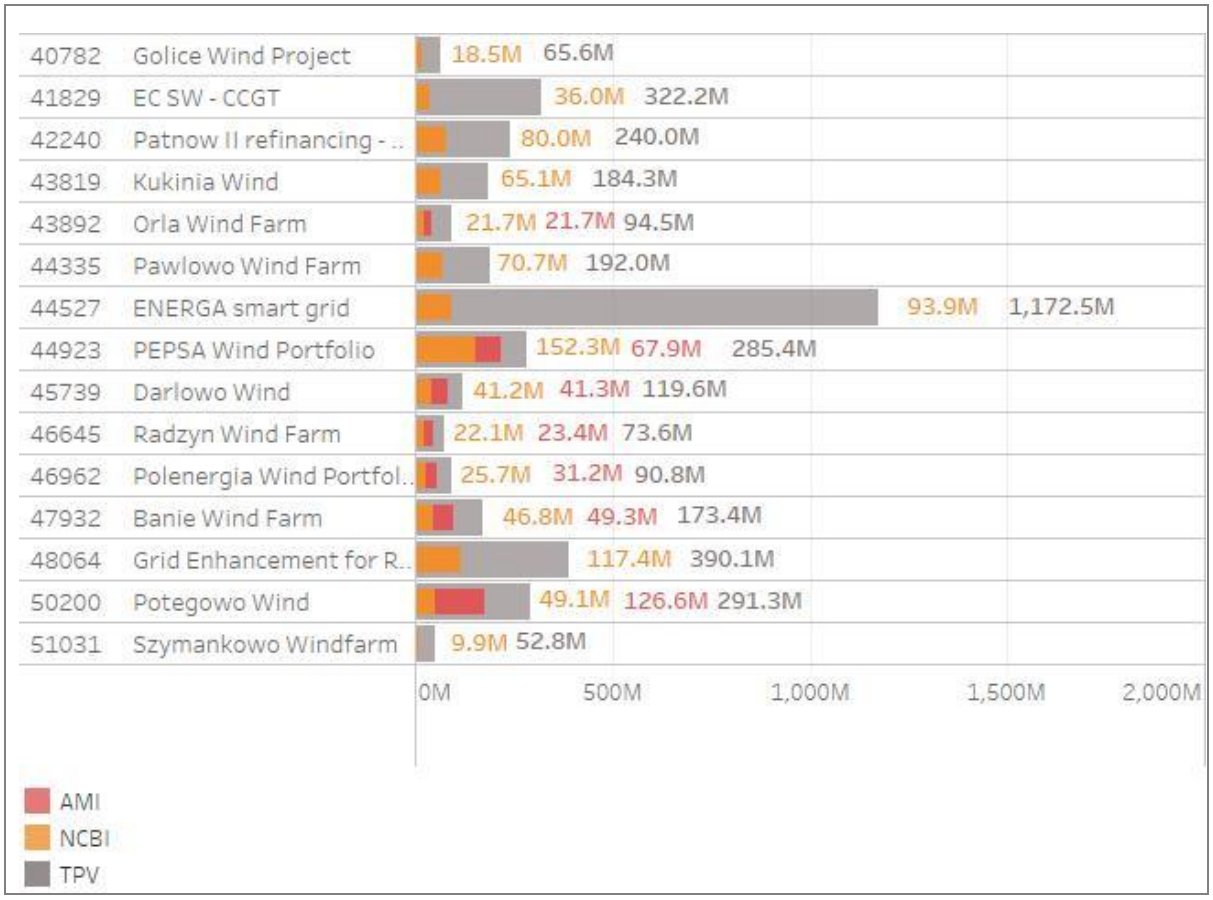
Out of the 15 operations in the evaluation portfolio, seven reported mobilisation of external finance as Annual Mobilised Investment (AMI). Total reported AMI on these operations in the CRR4 period was just under €235m, which represented 34% of total NCBI of Energy projects of that period. In the SCF period by the end of 2019, one project out of three reported AMI; this was over €126m, representing 72% of overall NCBI of Energy projects of that period.

Table 3: Reported AMI for Energy operations in Poland, 2011-2019 (approval year)

	Year approved	Operation Name	Op Id	EBRD NCBI (€)	AMI Type	AMI reported (€)	Total project value (€)
CRR4	2011	Golice Wind Project	40782	18,486,201	n/a	-	65,612,582
	2011	Patnow II refinancing - Konin Biomass	42240	80,000,000	n/a	-	240,000,000
	2012	EC SW - CCGT	41829	35,994,648	n/a	-	322,200,061
	2012	Kukinia Wind	43819	65,085,215	n/a	-	184,297,548
	2013	Orla Wind Farm	43892	21,714,634	Parallel loans	21,714,634	94,471,257
	2013	Pawlowo Wind Farm	44335	70,660,594	n/a	-	192,022,683
	2013	ENERGA smart grid	44527	93,901,122	n/a	-	1,172,504,763
	2013	PEPSA Wind Portfolio	44923	152,296,995	Parallel loans	67,913,987	285,381,963
	2014	Darlowo Wind	45739	41,240,639	Parallel loans	41,328,231	119,646,642
	2014	Radzyn Wind Farm	46645	22,147,981	Parallel loans	23,416,592	73,641,410

	2015	Polenergia Wind Portfolio	46962	25,678,522	Parallel loans	31,175,173	90,820,724
	2015	Banie Wind Farm	47932	46,754,901	Parallel loans	49,298,089	173,432,965
	TOTAL CRR4			**673,961,454**		**234,846,706**	**1,556,145,872**
SCF	2017	Grid Enhancement for Renewables	48064	117,376,403	n/a	-	390,083,315
SCF	2019	Potegowo Wind	50200	49,086,812	Parallel loans	126,555,237	291,322,337
SCF	2019	Szymankowo Windfarm	51031	9,859,618	n/a	-	52,762,714
	TOTAL SCF			**176,322,832**		**126,555,237**	**734,168,367**
TOTAL				**850,284,286**		**361,401,944**	**2,290,314,238**

Figure 5: Reported NCBI and AMI for Energy operations in Poland, 2011-2019 (approval year), €



2 Sector overview

Poland remains one of the most coal dependent and emission intensive countries in the EU. The Polish economy relies on coal-fired power plants, which still contribute nearly 80% of Polish electricity generation. While the share of RE in electricity generation has grown in the past decade from 7% to 13%, the largest increases in installed generation capacity in recent years still came from new coal-based plants. Curbing greenhouse gas (GHG) emissions through decarbonising power generation and reducing energy intensity are key challenges for Poland. Poland has one of the highest GHG emissions per capita as well as one of the highest GHG intensity of energy. Total emissions have been increasing gradually since 2014 contrary to the general downward trend in the EU.

Figure 6: GHG per capita (tCO2eq/ cap.)

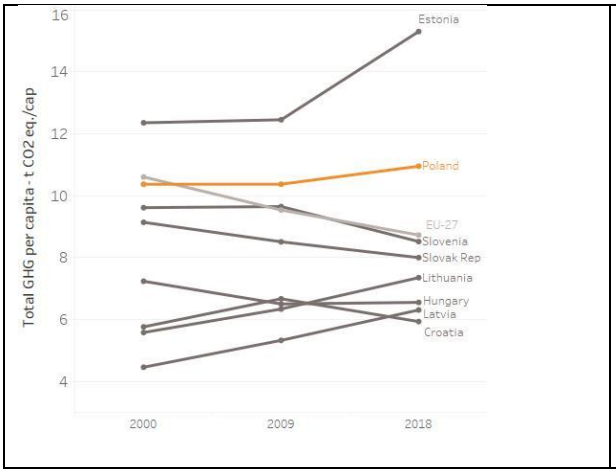
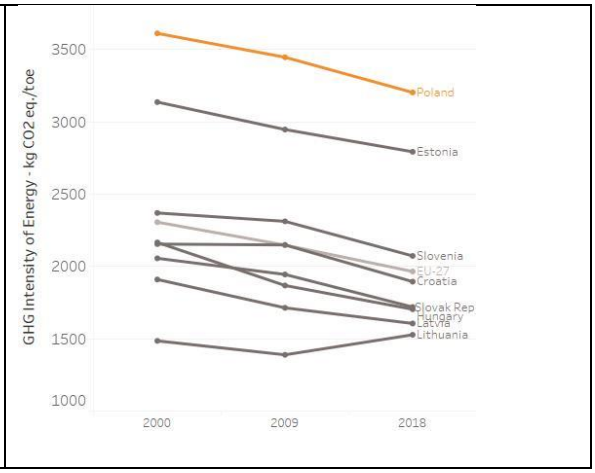


Figure 7: GHG intensity of energy (kg CO2eq./ toe)



Source of data: EU Energy Country datasheets

Figure 8: Gross electricity generation by fuel (TWh)

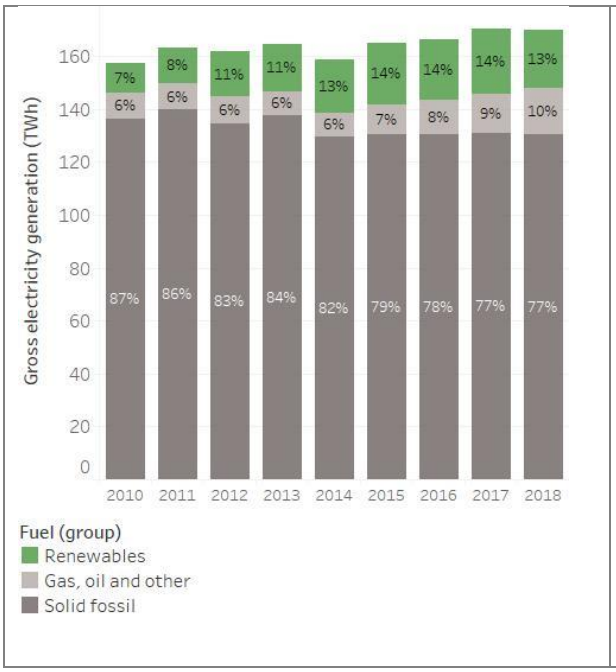
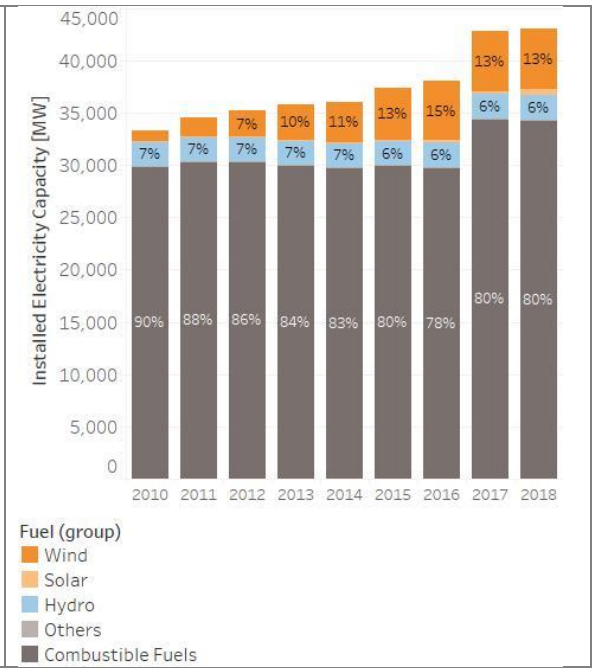


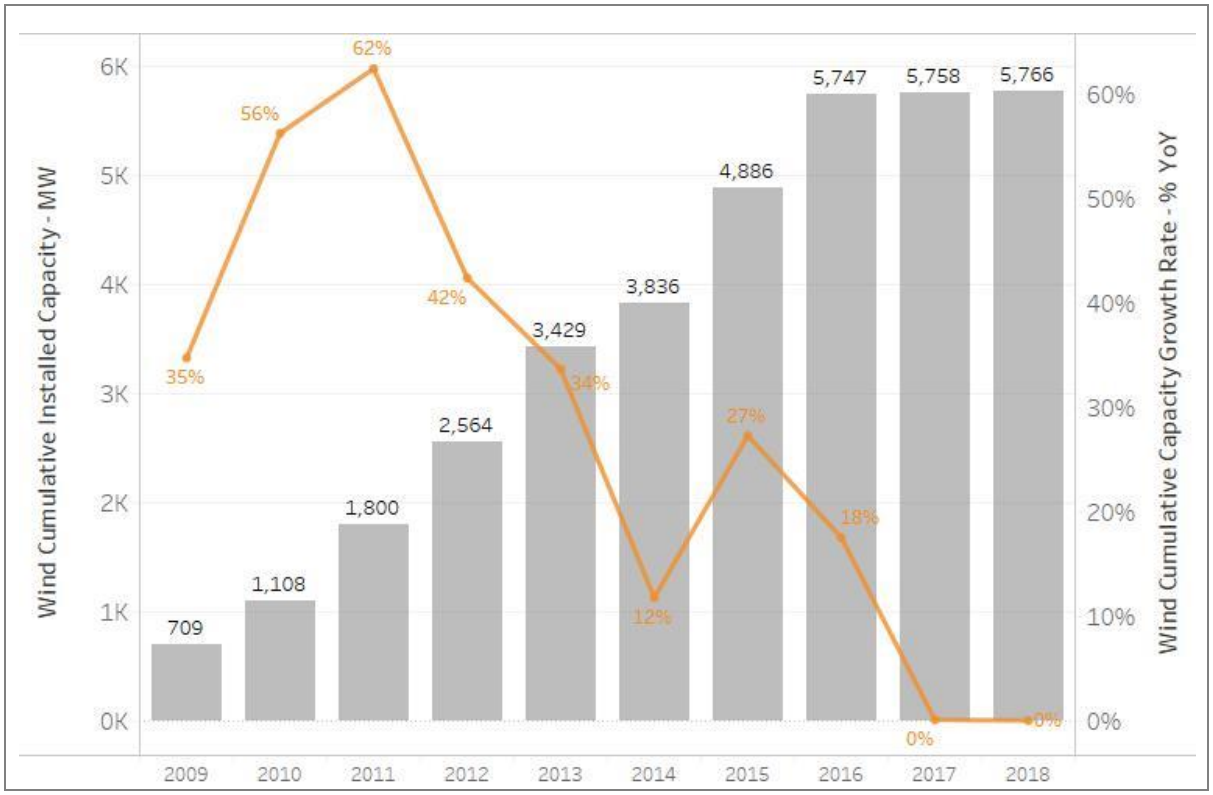
Figure 9: Installed electricity capacity by fuel (MW)



Source of data: EU Energy Country datasheets

Growth of renewable energy installed capacity and generation over the past decade has been led by on-shore wind sector. Installed wind capacity grew more than five times between 2010 and 2019, from about 1.1 GW to 5.9GW, putting Poland in 7th place in the European Union in terms of installed wind capacity. Wind contributes some 60% of annual electricity generation from renewable sources.

Figure 10: Wind cumulative installed capacity (MW, left axis) and Wind cumulative capacity y-o-y growth (%)



Source of data: EU Energy Country datasheets

Investments in RE sources in Poland in the past decade were carried out in the context of volatile regulatory environment. At the beginning of the decade, given that the prices of new wind or solar power plants were still relatively high, their development was determined by the creation of a public support system. The renewable energy support system (RESS) was based on a Green Certificates (GC) for each MWh of RE produced, and obligatory off-take of electricity by distribution companies at regulated prices. All companies supplying electricity to end-users were obliged to acquire GC for a certain percentage of energy sold, so the sale of GCs represented a revenue stream for RE producers. The effectiveness of this instrument is reflected in large-scale investments of 2013 and 2014. The sector's regulatory environment, including changes in the functioning of public support systems for renewable energy, was the primary factor influencing the high volatility of wind power investment volumes after 2013. Many investors sought to finish implementation of wind projects undertaken under this system in 2013-2015 due to the unstable regulatory prospects – the lack of certainty as to what direction reforms positioning RE in state policy in that period would take. For this reason, expenditure on wind projects was already decreasing in 2015, even before the fall in price of GCs and the introduction of the adverse regulatory changes.[i]

Changes to the RESS and new regulations introduced in 2016 aiming at restricting the growth of wind installations led to almost complete halt in investment in the sector. With the costs of wind installations gradually falling and investment into the sector expanding, the existing RESS was becoming expensive and not representing the right solution from market perspective. Newly elected government likewise represented an adversarial stance towards wind installations. In 2015, an alternative support system based on auctions was introduced, but did not initially function at a scale (only small pilot auctions were conducted in 2016-2017). At the same time, regulations aimed specifically at restricting wind developments were put into place – these included a law on minimum distance requirements for new projects, and new burdensome taxes imposed on wind farms. In parallel the price of GCs was also falling, due to their oversupply. This was caused by the expansion of co-firing of hard coal and biomass, which was earning GCs despite being controversial from RE perspective. These developments led to a withdrawal of commercial banks from new wind power investments, and to financial difficulties of existing installations, endangering their viability.

The situation improved from 2018, with the reversal of some of the most damaging regulations, and large scale auctions being held for new wind installations, and with the recovery of prices in GC and electricity. By 2018, Poland was on a trajectory to miss its binding target of 15% of energy consumption originating from RE by 2020. The government reversed the wind farm taxes and introduced measures to stimulate demand for GC. These included restrictions to the possibility of paying substitution fee (instead of redeeming the certificates) combined with higher green certificate redemption requirement. First large scale wind and solar auctions were held under the new RESS. Auctions conducted in 2018-2019 showed that wind farms were the most competitive in terms of costs, with the prices of energy contracted through the auctions turning out to be below the wholesale electricity price. The growth in investments seen in 2019 was significant not only when compared to previous years, but also against the backdrop of other EU Member States. In 2019, Poland was third in the EU in terms of funding new onshore wind farms.[ii] At EU level, a new Renewables Directive was adopted in 2018 mandating that RE should provide 32% of final energy consumption by 2030 in the EU as a whole, and prohibiting retroactive changes in RESSs.[1] The revision of EU Emission Trading Scheme (ETS) led to significant increases in prices of high-carbon power, which together with decreases in the cost of renewable technologies meant improved competitiveness of new RE projects and return to financial viability for existing installations.

3 Strategic overview

NB: detailed overview of relevant strategic context and priorities is in Annex 3.

The Energy operations in the evaluation portfolio were approved in the context of variously overlapping strategies. The main framework was given by the medium-term institutional strategic plans CRR4 (2011-2015) and SCF (2016-2020; only operations approved by end 2019 are part of the evaluation portfolio). SCF was further developed into three-year annually rolling business plans (SIPs). In the same period, there were three active sector (Energy) strategies. The strategic landscape was further complemented by three Poland country strategies. The bulk of operations relevant to this evaluation were approved under the first two sector and country strategies. Table 4 presents an overview of the Energy operations in the strategic context. In addition, the operations took place in the context of EBRD Sustainable Energy Initiative (SEI, initially approved in 2006), Sustainable Resource Initiative (SRI, approved 2013) and Green Economy Transition Approach (GET, approved 2015). The Transition concept review, introducing the Transition Qualities (TQs) as a lens to view countries' transition trajectory notably including TQ Green, was approved in 2016.

Table 4: Overview of Energy Poland operations strategic context 2011-2019

	2011	2012	2013	2014	2015	2016	2017	2018	2019
	CRR4					SCF			
Energy Sector	– 12/2013			12/2013 – 12/2018					12/2018 –
Country strategy	– 10/2013			10/2013 – 04/2018				04/2018 –	
Operations	42240 40782	41829 43819	43892 44335 44527 44923	IAPR 45739 46645	46962 47932		48064		50200 51031

The CRR4 foresaw gradual decrease in activity in ATCs, projecting decrease of annual business volume from 12% in 2011 to 4% in 2015 reflecting declining additionality post-crisis and the decreasing transition challenges in the EU-7 countries; EU countries were also expected to graduate during the CRR4 period. Neither the decrease of ABI nor the graduations actually happened for the ATC region over the CRR4 period. In terms of Power and Energy sector specifically, the directions for ATCs were to support projects enhancing energy competition, diversity and security, to increase power generation from renewable energy sources to meet EU targets for sustainable energy, and to finance distribution

[1] Renewable Energy Directive 2018/2001/EU entered into force in December 2018, as part of the Clean energy for all Europeans package. Most of the elements in the new directive need to be transposed into national law by Member States by 30 June 2021, when the original renewables directive will be repealed.

and transmission projects to reduce bottlenecks for connection of new renewable energy generation and support regional electricity transmission interconnections, especially in the Baltic States and Poland. Participation in the privatisation of power companies was also foreseen.

The SCF introduced more focus on strategic portfolio management. While the overall strategic orientation was to move progressively towards less advanced transition countries, the Bank would maintain the size of its portfolio in ATCs, as opposed to a decline (ahead of expected graduation decisions in the medium term), given the region's contribution to the financial strength of the Bank's portfolio and remaining transition opportunities. With the revision of Transition concept, the ATC region was expected to target Competitive, Green and Resilient transition qualities (with continued emphasis on Well-governed), with an overarching objective to support frontier-level innovation and higher-value-added activities given the advanced economies of the countries in this region. While the lens to view and target transition moved from sectors to TQs, the focus in the ATCs was broadly on the development of capital markets and introducing new innovative ways of financing and products, which may still not be present in the market.

Sector strategies provided some region-specific guidance for ATCs, mostly linked to the implementation of EU Directives in support of European climate targets. At the beginning of the evaluation period, Energy Operations Policy from 2006 was still in place. It outlined the regulatory implications of the EU Renewables Directive for ATCs, and noted that implementation of these is still in early stages. It noted that the challenge in these countries will be to tackle the wide-ranging and complex structural reforms required to change patterns of energy use and investment priorities, also with respect to energy efficiency. The following Energy sector strategy of 2013 noted that the legal and institutional framework for sustainable energy is mostly in place although the renewable energy market has been marked by regulatory uncertainties. The priorities were set for supporting low carbon transition, unbundling, market coupling and promoting security of supply. The most recent Energy sector strategy of 2018 did not outline any specific Bank priorities of approaches for the ATC region.

Country strategies presented the discussion of transition challenges and provided the most specific information on the Bank's priorities in the Energy sector. The initial strategy of 2010 prioritised supporting diversification of energy supply and renewable energy production. It also aimed to support privatisation in the energy and oil and coal sectors and promote gas market development. The following strategy of 2013 established the promotion low carbon economy as a priority, operationalised through financing projects aimed at reducing GHG emission and energy intensity, and supporting private operators of energy infrastructure, for projects leading to the creation of open and competitive markets in energy. This strategy likewise foresaw active policy dialogue in this area, supporting the development of more market-based financing schemes for investments in renewables. The final country strategy, approved in 2017 after the review of the Transition Impact concept, set a priority in Green Economy Transition. It committed to continue financing viable energy projects under the new auction-based system with the objectives of increased use of renewable energy and more diversified energy mix.

4 Findings

How relevant were Energy operations in Poland to the Bank's strategies and local context?

Relevance to client and sector needs and government priorities

Poland has been undergoing its energy transition in the context of the EU energy and climate policies and the related binding targets, including achieving 15% energy from renewable sources in its final energy consumption by 2020. Despite the country's formal commitments to these broader EU objectives, Poland has also been one of the most prominent opponents of low-carbon transition both domestically and by opposing stronger EU climate action. In 2016 the government introduced regulatory changes that were actively adverse to both existing and potential new wind farms. The situation only reversed in the last two years, when more ambitious commitments were declared by Polish authorities in the National Energy and Climate Plan for 2021-2030.

In this context, EBRD projects in the sector made specific links to Poland's legacy of coal-intensive energy generation and its high carbon footprint inconsistent with EU's climate goals, and to the necessity of achieving binding targets through expanding RE generation. Projects in the State portfolio were complementary to these needs by emphasising the necessary upgrade of the infrastructure for RE connections. However, the increasing inconsistency between the sector's targets and the government's policy eventually led to the Bank's temporary discontinuation of investment in RE between 2016-2018, and focus on intensified policy dialogue. The Bank resumed investment in 2019.

Poland has been undergoing its energy transition in the context of the EU energy and climate policies and the related binding targets. Achieving a sustainable, low-carbon and environment friendly economy by combating global warming and increasing production of renewable energy sources (RES) is a key priority of EU energy and environmental policies. In terms of climate and energy policy, EU targets as well as the framework directives set some of the broader conditions for Polish climate and energy choices. Much of the action that is being taken at the national level is to comply with EU regulations. The EU's first package of climate and energy measures was agreed in 2008 and set targets for 2020. These included reducing GHG emissions by 20% (compared to 1990) and increasing the share of renewable energy to 20%. In 2014, the 2030 climate and energy framework was agreed with a more ambitious set of targets for the period 2021-2030. By these targets, the EU committed to cutting its GHG emissions by at least 40%, and raising the share of renewable energy in energy consumed by the EU should be at least 27% by 2030.

The EU Renewable Energy Directive[2] of 2009 adopted the biding target of 20% share of energy produced from RES in final energy consumption. EU Member States have committed themselves to achieving the national targets set by the Directive – Poland's target was set at 15%. EU member states adopted their own national action plans; Poland's "National Action Plan in the field of energy from renewable sources" was adopted in 2010, and contained intermediate objectives and actions to achieve them. The underlying assumption of the Plan was that in the Polish conditions the highest potential for RES development were in the area of wind energy and biomass in electricity generation.

Despite the country's formal commitments to these broader EU objectives, Poland has also been one of the most prominent opponents of low-carbon transition both domestically and by opposing stronger EU climate action. The main reason for this stance throughout the past decade is the country's historically strong coal industry, which employs significant number of people, and is likewise perceived as a source of energy security. At the EU level, Poland has repeatedly worked to block, delay and water down legislation to promote climate ambition and low-carbon development. The government elected in 2015 rejected the EU climate and energy package for 2030 agreed in 2014 under the previous government and was calling for its renegotiation. The approach of the government often was to comply with the minimum required while trying to preserve the coal-dependent energy system and minimise the impact of environmental regulation. EU climate and energy directives were habitually transposed late and Poland repeatedly negotiated opt-outs, derogations and special concessions from its EU partners in many areas.[iii] In 2016 the government introduced regulatory changes that were actively adverse to both existing and potential new wind farms (distance rule, punitive taxes).

In the most recent years there however seems to be growing acceptance of the necessity of progress on low carbon transition by the government. Rising carbon emission costs together with lower RE technology costs, and the EU's continuing push for ambitious climate objectives are perhaps the most significant factors behind the apparent move. The most damaging regulations of 2016 were reversed in 2018, while a new auction-based system for renewables support started to deliver new renewables projects. Following the EU's revised RE Directive in 2018,[3] Poland presented its National Energy and Climate Plan (NECP) for 2021-2030, outlining how it will meet the new 2030 targets for renewable energy and for energy efficiency.[iv] As part of this plan, Poland commits to achieving 21-23% of RES share in gross final energy consumption by 2030 (this is still below the level of 25% recommended by the European Commission). Achieving this target will mean significant scale up in RE generation. The document's Annex outlining the impact scenarios notes that "*The results obtained imply the need to ensure a substantial increase in the share of renewable energy in electricity generation. In 2015-2030, the share of renewable energy in the power sector is set to grow from 13.4% in 2015 to 31.8% in 2030. […] Achieving the above RES results in the energy sector will not be possible without*

[2] Directive 2009/28/EC on the promotion of the use of energy from renewable sources
[3] Renewable Energy Directive 2018/2001/EU

ensuring a substantial share of offshore wind energy. By 2030, offshore power plants with a capacity of nearly 4 GW should have been built."[v]

In terms of sector needs, projects made specific links to Poland's legacy of coal-intensive energy generation and its high carbon footprint, inconsistent with EU's climate goals. All projects in the earlier period made references to the dominant role of coal in energy generation and the government's efforts to support diversification in the sector, including through the existing RESS based on Green Certificates. They also linked these sector needs to the binding targets following from the implementation of EU Directives, and noted that the implementation of new RE generation capacity is not sufficient to achieve the targets unless it is scaled up. For example, project document for Orla notes: *"The Green Certificate quotas were set based on Poland's renewable energy target agreed as part of its EU Accession Treaty. The actual renewable energy generation has been lagging behind the quotas set by the Government and this situation is expected to continue in the next years, which drives the need for the new wind capacity. […] This level of renewable energy capacity is not sufficient to meet Poland's green energy target of 14% for 2015. In mid-October 2012 the Minister of the Economy signed the secondary legislation specifying among others the renewable energy quotas for the years 2013 - 2021. The quota for 2013 will be 12% and will rise to 20% in 2021.*"[vi] Likewise the later IAPR concluded that: "*In order to comply with the national targets of 20% share of renewables in total energy consumption and the mandatory EU target for Poland of 15% by 2020, there is a need to substantially intensify investment in additional RE capacity, which needs to more than double*."[vii]

The grid projects in state portfolio complemented this link to sector needs by emphasising the necessary upgrade of the infrastructure for RE connections. The rationale was explained in the IAPR, referring to the increasing concerns about the impact of RE on the grid: "*Widespread penetration of variable renewable energy poses considerable challenges to the stability of the Polish electricity grid, creating new challenges in network management and demanding new business models from network operators*."[viii] The 2017 grid enhancement project noted that aside from the level of support to RE installations , it's equally important to facilitate the necessary infrastructure, which would secure that investments in new RE generation assets can get connected to the electricity grid and efficiently integrated into the electricity system of the country.[ix]

However, the increasing inconsistency between the sector's targets and the government's policy eventually led to the Bank's temporary discontinuation of investment in RE between 2016-2018, and focus on intensified policy dialogue. All projects since 2011 referred to the period of uncertainty created by the government's decision to review the RESS. The government's concerns included rising costs of the support, including for quickly-growing biomass co-firing technology which also later led to over-supply of GCs and collapse of their price, impacts of RE on the distribution grid and 'uncontrollable growth' of on-shore wind. The uncertainty about the future policy and RESS led to low investor confidence. Yet, the Bank assumed the rationale for the investment based on the needs of the sector linked to the broader EU goals was sound, and would remain relevant. Regulatory risk was present and acknowledged by the Bank especially in projects approved from about 2013 which were more conservatively structured. Eventually however, when the regulatory risk materialised in 2016, putting in risk existing installations including the Bank's not insignificant portfolio, the Bank decided to disengage from further investment in the sector and cancel planned technical cooperation, and focused on policy dialogue only. The Bank's investment resumed at the end of the evaluation period in 2019.

Relevance to the EBRD transition mandate and applicable strategies

Projects approved over the evaluation period addressed the transition challenges identified for the Polish energy sector. These included limited private sector participation in generation, and barriers to grid access for new energy producers. This was compounded by policy uncertainty and distortionary RE subsidies.

Projects in the sector responded to the identified transition gaps by supporting RE generation with private sector producers and co-financing complementary investments in the electricity grid. Projects also addressed the expansion of competitive markets for GCs and electricity. Policy uncertainty was addressed in ongoing policy dialogue throughout the evaluation period, intensifying after 2016. Environmental outcomes were formally recognised as transitional with the introduction of TQ Green. The transition rationale of most new (post 2019) projects now relies fully on the environmental (GET) indicators related to physical implementation.

All projects were in line with the relevant country and sector strategies and the GET approach.

Transition gaps in the Energy sector were outlined in the Poland country strategies. Overall, the transition gaps in market institutions were assessed as small or negligible already at the beginning of the evaluation period, while gaps in market structures were still medium. Key challenges in the sector included significant state presence and limited private sector participation in generation, and likewise barriers to grid access for new energy producers. The system of renewable energy subsidies was assessed as distortionary and subject to large policy uncertainty. Table 5 summarises the key transition challenges in the sector over the evaluation period.

Table 5: Summary of transition challenges in Energy Poland over the evaluation period

Power	**Sustainable energy**
• Key challenges: (i) increase **private sector participation in generation** and retail energy supply; (ii) increase **cross border energy trading and regional integration**; and (iii) **remove end user price regulation**. • To date, three out of four vertically integrated groups in the Polish power sector have been listed, including two that still remain majority state-owned, and one that was privatised in 2010; the Polish **power sector is still largely state-controlled** Transition gaps: 2010: Market structure: Medium; Market institutions: Negligible 2013: Market structure: Medium; Market institutions: Negligible	• Key challenges: (i) **remove barriers to grid access** for new renewable energy producers; (ii) restructure **distortionary** energy efficiency and **renewable energy subsidies** in order to encourage faster implementation of commercially viable investments; (iii) enable **credible green investment schemes** • The **legal and institutional framework for sustainable energy is established** but currently **faces considerable policy uncertainty** and energy intensity and renewables' penetration are lagging well behind the EU averages; Transition gaps: 2010: Market structure: Medium; Market institutions: Small 2013: Market structure: Medium; Market institutions: Small

Projects in the sector responded to the identified transition gaps by supporting RE generation with private sector producers and co-financing complementary investments in the electricity grid. **Projects also addressed the expansion of competitive markets for GCs and electricity**. In the beginning of the evaluation period, projects invariably sought to achieve 'demonstration effects' – i.e. attracting further private investment in the Polish RE/wind sector under the conditions of regulatory uncertainty, by showcasing successful and commercially viable projects and creating a critical mass of such operations. In addition, already in the early projects there was a drive for projects to rely on market-based mechanisms as opposed to mandatory off-takes at regulated prices. These projects committed to selling part or all of their GCs and/or electricity to traders , and thus being subject to some level of merchant risks (Kukinia, Orla, Pawlowo, PEPSA). With the creation of the IAPR there was a strengthened transition element of supporting private sector participation in the sector. As the IAPR noted: "*The prevailing regulatory uncertainty and lack of long term financing provides a competitive edge to state-controlled energy utilities, which have the easiest access to the financing for new projects. […] Private players have sold some of their assets to Polish state owned utilities and there has been an increase in state-controlled utilities' market share from 4% in 2011 up to 20% in 2013 […] This creates a risk that the renewable energy sector will increasingly be controlled by the incumbent utilities instead of seizing the opportunity to challenge their dominance. It would strengthen the current oligopolistic market structure, instead of taking the opportunity to increase competition in the energy market thanks to introduction of new players.*"[x] The projects under the IAPR also continued to aim at the expansion of competitive markets for electricity and GCs.

Policy uncertainty was addressed in ongoing policy dialogue throughout the whole evaluation period, intensifying after 2016. The period after 2011 was characterised by protracted regulatory uncertainty in the sector. The Bank's response was through on-going policy dialogue with the key actors in the system, including the Ministry of Economy and the regulator (ERO). The need for more consistent and targeted engagement then was translated in the creation of the Integrated Approach with more formalised objectives and including a fairly substantial budget for technical cooperation. The IAPR expected this approach to lead to 'more systemic changes' in the sector. The rationale for the strengthened PD was to contribute to an appropriate investment climate and push for an implementation

of a stable market-based regulatory framework. Those had to be reconsidered in the light of European developments favouring auction based (rather than market driven) support systems, thus the change of original scope of policy engagement had to be implemented in 2015. After the government's regulatory changes of 2016, the policy dialogue became the main priority and the main instrument for transition impact, with focus on promoting the reversal of the most damaging provisions, and facilitating an efficient and transparent implementation of the new auction system for renewables. Aside from this, further private sector investment and TC was cancelled in this period together with the closure of the IAPR.

Given the nature of the projects, environmental outcomes related to physical implementation (RE generated, CO2 savings) were connected to most of them. These were formally recognised as transitional with the introduction of TQ Green and incorporation of low-carbon transition under TI. While the former TI concept and its operationalisation focused on market institutions and market structures, there was little scope for physical implementation and its outcomes to be recognised as transitional. While these environmental outcomes formed a part of the projects' transition rationale, they were included, somewhat awkwardly, under the objective of Standard setting of business conduct. With the Transition concept review, these types of indicators were included under TQ Green and are underpinning the transition objective of Green Economy Transition. The transition rationale of most new (post 2019) projects now relies fully on the environmental (GET) indicators related to physical implementation.

All projects were in line with the relevant country and sector strategies. Projects usually made only very brief references to the applicable strategies. That said, all implementation was in line with the relevant strategies in place at time of approval. Supporting renewable energy production and emissions reduction has been a sustained strategic priority of all country strategies. Country strategies likewise identified a priority for the policy dialogue in this area. Contributing to the growth of renewable energy generation and promotion of environmentally sustainable development has also been a sustained priority in the energy sector strategies. The operations were also in line with the objectives of the Sustainable Energy Initiative and later the Green Economy Transition (GET) Approach.

Financial and non-financial additionality

Most projects in the evaluation portfolio shared a common additionality rationale, rooted the diminishing confidence of commercial lenders in the context of policy uncertainty. EBRD's financial additionality was weaker in the first half of the evaluation period when Poland experienced strong private investment in the sector. The Bank's role increased around 2015 due to intensified withdrawal of commercial banks.

The main sources of EBRD financial additionality were drawn from the provision of project finance with limited recourse and thereafter promoting partial exposure of projects to market risks, which was considered as the first step out of the subsidised business model. Commercial mobilisation was also an increasing source of additionality over the evaluation period. In the period of distress the Bank provided support to projects, accompanied by intensified policy dialogue with the authorities. With renewed regulatory stability and return of the confidence of private investors the additionality of the Bank in the sector may be diminishing.

Most projects in the evaluation portfolio shared a common additionality rationale, rooted in the diminishing confidence of commercial lenders in the context of policy uncertainty. Most projects presented similar additionality justification based on a combination of financial and non-financial additionality elements. These can be summarised as follows:

Financial additionality:

- Limited availability of **long-term project finance**, largely due to the **regulatory uncertainty**, and in particular project finance on limited recourse basis and for projects exposed to some degree of market risks (i.e. selling share of GCs and electricity output at market prices);
- **Commercial mobilisation**: the ability of EBRD to provide comfort to other lenders and thus attract commercial finance to the project that would otherwise not be present or be present to smaller extent.

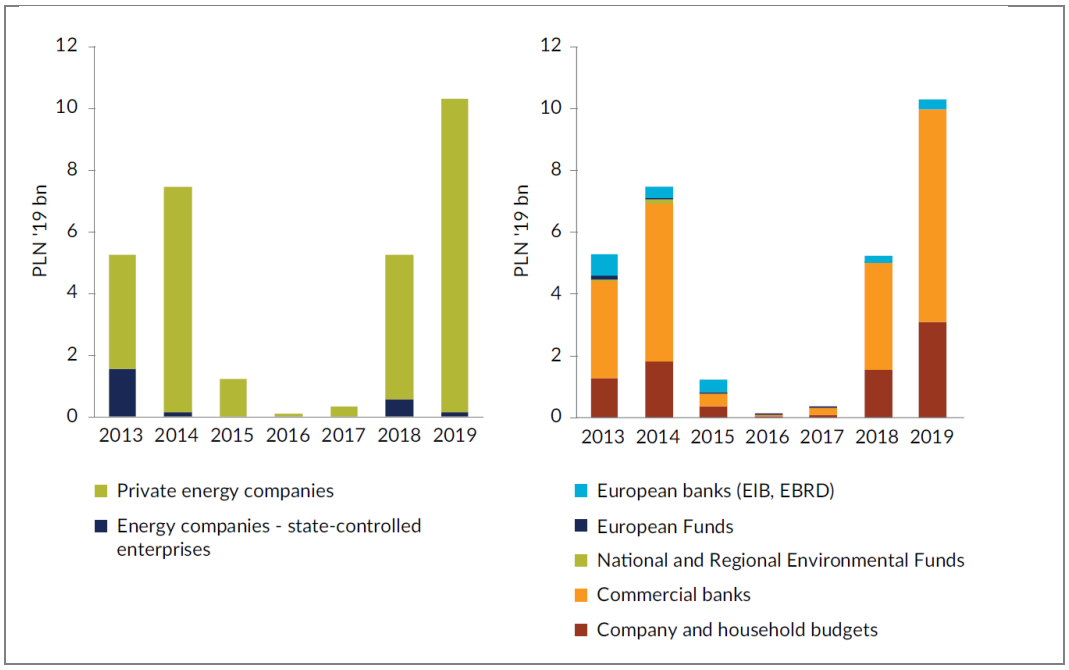
Non-financial additionality:

- Extensive **experience and knowledge** of the Polish power sector;

- Relationship with the government and on-going **policy dialogue**; and the related willingness to take **political and regulatory risk.**

The Bank's financial additionality was weaker in the first half of the evaluation period but increased in around 2015 due to intensified withdrawal of commercial banks from the sector; **EBRD however followed them soon after.** Private investment in the wind sector was strong overall until about 2014. In fact, before 2015 many investors sought to finalise their projects in this period to be eligible for the support of the out-going system, while the design and specifics of the follow-up were as yet unclear; this led to a newly installed wind capacity of over 750MW annually on average between 2011-2015. A study of financial flows in the Polish renewables found that private energy companies were the main investor, responsible for over 90% of all projects in implementation – these were based on financing from commercial banks and investors' equity. In 2013-2014 approximately PLN 12bn (~€2.6bn) was invested, before the regulatory changes in 2015 brought about a slump, while commercial banks withdrew from projects.[xi] While still approving two new wind farm projects in 2015, EBRD then likewise disengaged from further financing and only returned in 2019 into the sector.

Figure 11: Financing of onshore wind farms by investor group and by funding sources in 2013-2019



Source: WiseEuropa (2020)

In this period the Bank found its additionality in emphasising limited recourse financing. For example in 2013 mgmt. noted "*[among projects currently under development in Poland] Kukinia wind farm is the only one financed on the limited recourse project finance basis, while all the other projects are being constructed with financing secured at the corporate levels of the owners. Through the promotion of project finance solutions the Bank supports private independent energy producers that don't have such strong balance sheets as big energy utilities*."[xii] In several cases however certain partial recourse elements were incorporated in the financing structure. The Sponsors provided cost overrun guarantees of up to 10%, except for Banie which was already built and refinanced, PEPSA which had an unlimited cost overrun guarantee and Pawlowo which had no cost overrun guarantee. However, Pawlowo received a minimum price guarantee from the Sponsor (this was driven by EIB involvement in the financing structure, according to the team). Additional guarantees were given by the Darlowo Sponsor of 10% to deleverage the project in case the project fails to secure the long term fixed offtake contract and by Polenergia to inject additional equity for each turbine that does not qualify for the green certificate support regime. Polenergia projects also benefited from Sponsor's debt service guarantees.[xiii]

The Bank was promoting partial exposure of projects to market risks; this was an approach that was unusual in the context of the relatively generous RESS based on mandatory off-takes by utilities, and aimed to promote the expansion of competitive markets. By 2015 (Polenergia), the Bank reported that commercial financing was "*practically non-existent for the projects exposed to even the minor*

market risk. The commercial banks are fundamentally unwilling to finance projects exposed to merchant risk, normally requiring long-term, fixed price off-take agreements with top-credit utilities, which are not available in the current market."[xiv] In some cases, revenues from GCs were secured in its expected level via off-take contracts with energy utilities or traders, which guaranteed a certain combined revenue. In other cases the Bank agreed to rely on electricity and GC prices achievable by the projects in the market. PEPSA and Orla had secured 15 year off-take contracts with energy traders with CPI adjusted fixed prices; Pawlowo secured a 3 year off-take agreement using a floor price and a long term support from the Sponsor. Darlowo secured a long term offtake contract, however already at the time of disbursement the contract was disputed by the off-taker, and the Bank has implemented a structure which envisaged a merchant basis. Radzyn, Banie and Polenergia had not secured long term off-take contracts and have taken a view on forecasted market prices.[xv]

Commercial mobilisation was an increasing source of additionality over the evaluation period, with reported AMI rising on Energy projects from about 2013. In projects under the IAPR, financed 2014-2015, the Bank's presence was conducive to attracting commercial banks to the projects given the late stages of the discussions on the changing RESS, when long-term fixed revenues were not possible to be secured. Orla and PEPSA reported commercial mobilisation pre-IAPR, together with all the IAPR wind farm projects (see overview in section 1.4). Orla, Polenergia, Banie and Radzyn were co-financed by privately owned commercial lenders from the outset, while mobilisation for PEPSA portfolio was only possible for its second phase, co-financed by BOS Bank, local commercial bank with environmental mandate, indirectly majority owned by the State.. For Pawlowo, while commercial mobilisation was expected as a source of additionality in the project document, it was not ultimately achieved as the second phase of the investment did not go forward. Post-IAPR, Potegowo windfarm reported AMI in excess of €120m, the largest of all operations and the largest in proportion to TPV.

The Bank provided support to projects in the period of distress, accompanied by policy dialogue with the authorities. The Bank was active in policy dialogue with the authorities, promoting transparent and market-based support to renewables, and particularly advocating for no retroactive changes in the regulations. Given the weaknesses of the original RESS which led to increasing costs for the government accompanied by oversupply of GCs, the Bank's policy efforts did not ultimately prevent the introduction of adverse regulatory changes in 2016. These measures negatively affected all existing wind installations, and endangered their financial stability and viability. In this period the Bank took the necessary actions to restructure three transactions, in order to enable the companies to service the debt. The Bank and in some cases Sponsors undertook various necessary changes in the projects including (i) in their commercial structure, (ii) in their scope, and (iii) in the shareholding structure or commercial banks' participation.[xvi] The Bank reports that it was instrumental in helping the projects survive and in several cases acted as a de facto broker between the projects and the financing consortium, by taking a leading role in the difficult discussions. Outside of what can be seen as a function of sound banking, the Bank used its position in taking a lead role in discussions with authorities on the reversal of the most damaging changes, exerting further pressure by halting investment and planned TC funds in the interim.

With renewed regulatory stability and return of the confidence of private investors the additionality of the Bank may be diminishing. After the period of almost complete withdrawal of all investment in the sector in 2016-2017, the revival was strong already in 2018 and 2019 – in 2019 alone, the value of investments in wind exceeded PLN 10 bn.[xvii] EBRD returned to the sector with Potegowo and Szymankowo in 2019, and further Quadran portfolio, Debsk, Taaleri and WKN Pomerania in 2020 (not part of this evaluation portfolio). In Potegowo, the project document argues that the Bank's CRM approval at an early stage, when there was still no clarity on the availability of the support scheme, allowed the lead Sponsor to initiate Project construction already in summer 2018, effectively resulting in commencing part of the operations a year earlier than would otherwise be possible. In addition, the Bank supports partial market risk project and provides longer tenor than on available on the market. Similarly for Szymankowo the Bank roots the additionality argument in this being the first unsubsidised fully merchant financing for renewables in Poland. While these two projects may be seen as the Bank facilitating the return of the sector to 'normality' continued presence based essentially on 'longer tenor' argument in an advanced transition market with abundant private investment may require further justification.

What results and transition impacts can be identified from these operations?

Adequacy of design for results and results reporting

Large part of the transition expectations of the operations over the evaluation period stemmed from 'demonstration effects'. The long-standing problematic approach in the monitoring of these effects in the Bank was reflected in this portfolio.

The revision of Transition Impact concept in 2016 introduced TQ Green and related physical indicators in its operationalisation. These indicators allow for new projects' TI to be based solely on physical implementation. The monitoring of their achievement however appears disconnected from aggregate reporting.

Policy dialogue and TC were incorporated in Country strategy priorities for the sector and in the Integrated Approach but reporting on these elements has been inadequate.

Large part of the transition expectations of the operations over the evaluation period stemmed from 'demonstration effects'. The long-standing problematic approach to the monitoring of these effects in the Bank was reflected in this portfolio. In the previous (pre-2016) operationalisation of the transition concept, the objective of demonstration effects was often used to underpin the wider, systemic changes brought forward by supporting novel approaches in various sectors. While sound in principle as a theory of change, its monitoring and reporting was always problematic, relying mostly on reporting of new instances and considering contribution/ causality as given. In the case of Polish wind farms the rationale for demonstration effect was that commercially successful wind farm investments will attract more investors into the sector despite the context of regulatory uncertainty. This was commonly monitored in TIMS at project level via two benchmarks representing the desired causality: i) commercial success of project; ii) instances of new similar investments. The key issues with this approach can be summarised as follows:

- There is rarely any discussion beyond the ticking of the achievement (or the lack of) of the two benchmarks, which would attempt to substantiate the causality between them. It may not be possible to fully evidence the contribution but it would be possible to discuss the main external factors that contribute to the decisions on new developments, and how significant these factors are in relation to the Bank's presence.
- Possible negative demonstration effects are ignored in the transition reporting as well; for example it is not discussed how the fact that Polenergia had put on hold implementation of half of its expected installed capacity due to concerns about regulatory environment could send negative signal to potential investors; the objective is still considered achieved based on other projects' closing;
- The monitoring also at times undermines its own rationale for transition – when new projects with the specified parameters were not observed, TIMS ascribes this to the context of regulatory uncertainty and notes that investment should resume when the situation is resolved (e.g. Pawlowo, PEPSA); clearly, the rationale for the demonstration effect was to attract investment into regulatory uncertainty in the first place. Similarly, when TIMS acknowledges the non-achievement of commercial success, it still considers demonstration effect objective 'partially achieved' based on new wind farm projects (Darlowo) – undoing its own rationale that the demonstration was supposed to come from commercial success.

Overall, these issues with the assessments of demonstration effects have long been known, and eventually were dealt with by removing this type of objective from the new operationalisation of TI (post-2016). However, over the years that this objective formed the principal transition rationale of the Bank's presence in the sector, replacing considerate and balanced discussion about the role and visibility of EBRD operations with the approach of 'ticking boxes' did not ultimately serve the understanding of the Bank's contribution to transition very well.

The revision of Transition Impact concept in 2016 introduced TQ Green and related physical indicators in its operationalisation. These indicators allow for new projects' TI to be based solely on physical implementation. The monitoring of their achievement however appears disconnected from aggregate reporting. The introduction of TQ Green allows the transition rationale of new projects to be based solely on achievement of outcomes relating to physical implementation

(Renewable capacity installed; Renewable electricity produced; CO2 emissions reduced). This is in contrast to the previous TI concept where transition was sought from improving market structures or institutions. This shift allows for two important developments with regards to this type of projects:

- **This practically guarantees TI achievement**. In the past the achievement of TI expectations was linked to systemic changes in the sector or market, which were subject to a variety of external factors, and were therefore often either not fully achieved or the contribution to their achievement was not appropriately evidenced (see demonstration effects above). Physical implementation however is almost always successful, perhaps save for occasional scale-backs or delays. Where TI is linked to indicator inherent in physical implementation, it can be predicted to be almost universally successful as well as relatively easily monitored and evidenced.
- **Foundation in low-carbon transition can provide a renewed rationale for operations in advanced countries**. In these countries the remaining (former) transition gaps in market structures and institutions were either small or proven beyond the capacity of the Bank to address. Their GHG energy intensity or energy production mix may however still be some way from targets and can therefore be a relatively easy TI contribution to tackle. The majority of projects approved in 2019 and 2020 in Polish energy are based solely on this GET rationale.

While the monitoring of this type of indicator is straightforward and exists at project level, this is rather inexplicably not being used for aggregate reporting on these projects. Instead, reports such as the Country reporting (CSUs, CSDRs) use aggregated GET database data to report on country strategy indicators. This is inappropriate and should not be practiced – GET data represent solely ex-ante expectations and commitments and are not revised based on actual achievements.

- For example, the 2015 Country strategy update for Poland indicated "*Wind farm projects supported by the Bank together added 150 MW of wind energy generation capacity*"[xviii] – this refers to the expectations of the three wind farm projects signed the previous year (Orla, Darlowo, Radzyn) as reported through GET. However, the latter two projects actually scaled back the installed capacity compared to expectations (Darlowo from 74MW to 62MW and Radzyn from 39MW to 36 MW), so the actual installed capacity from these projects was 135MW.
- These differences can affect the outcomes in both directions, as sometimes projects are extended. Similarly the volumes of produced electricity and CO2 savings are in reality often different from ex-ante expectations. Ultimately, GET data should not be used for any results reporting, as these figures do not represent results in any way. In addition, results should only be reported when actually achieved and verified, which is also not a characteristics of the GET figures.

Policy dialogue and TC were incorporated in Country strategy priorities for the sector and in the Integrated Approach but reporting on these elements has been inadequate. Policy dialogue in the sector was incorporated as a priority in country strategies covering the period (CS 2013, 2017) in general terms, and likewise in fairly general terms reported on in annual country reporting (CSUs, CSDRs). In the Integrated Approach the elements of policy were discussed in more detail as they formed a part of the transition rationale of the IA, combined with the design of TC assignments to support the 'soft' elements of expected transition. Yet the reporting on these aspects under the IA was not particularly strong either.

- Given the developments in the sector the team requested a change in the scope of the previously approved TC project at TC Com in 2016. Even after these changes, most of the TC was eventually cancelled. However, despite the fact that significant TC formed a substantial part of the transitional rationale for the IA, there was no reporting on the changes or the eventual cancellations. After the IA closure, there was no final report presented to the Board on its results.
- The TC project (#433 in TCRS) was mostly cancelled, and there was no reporting on this project in the annual SSF reports that are circulated to shareholders. In the TCRS there is a 'completion report', which considers this project to be overall '*100% – Outstanding*', despite the fact that it three out of its four assignments were cancelled so it certainly could not have achieved all its objectives. Another completion report was provided to the evaluation by the Banking team; this rates the TC project at 50% overall.
- Policy dialogue intensified after 2016. One major achievement in the contribution the reversal of the real estate tax on wind farms was reported in the Annual report on transition performance for 2018 as a 'case study'.[xix]

- Since 2018, Priority Policy Objectives (PPOs) are in place as a system of annual tracking of policy achievements. In case of Polish renewables these were:

	Annual PPO	Reporting
2018	Reversal of the Real Estate Tax	Highlights: Despite an adverse political environment, draft law amendment reversing adverse changes to the level of real estate tax for wind farms was approved by the lower chamber of Polish parliament, and European Commission published formal notification decision on new renewable energy support system.
2019	Conduct of new renewable auctions (min. 1GW of new capacity).	Fully achieved Key policy achievements: Large scale renewable auction has been conducted in December. Based on partial results it is expected that over 2GW capacity is awarded support.
2020	Further improvement of the regulatory environment for renewables in Poland, resulting in (i) progress on construction of at least 1GW of renewable capacity awarded in 2018 and 2019 auctions, and (ii) auctions or PPA support to stipulate investment decisions on further 1GW capacity	Fully achieved Key policy achievements: 1) 2020 auctions have been successfully conducted 2) Option to seek COVID related construction deadline extension for projects from 2018 and 2019 auction has been enacted as part of country's COVID response package and 2) Offshore Act has been finalised and entered the parliamentary approval process.

Source: EBRD intranet PPO database

It is notable that the PPOs for 2019 and 2020 do not in fact indicate any policy or regulatory changes that the Bank will try to achieve, so it would be difficult to classify them as 'policy objectives' in the first place. Likewise the reporting on these PPOs does not mention any contribution that the Bank might have had to the developments listed. It is of course highly unlikely that without the Bank's policy dialogue there would be no RE auctions held or that Offshore Act would not have been finalised. The complete silence of this reporting on the Bank's actual policy work and its contributions to regulatory developments renders it of little value overall.

- **Finally, the system in place has difficulties recognising medium-term policy work and its achievements in terms of transition impact**. Policy was a central part of the transition rationale of the IA, yet the scope and implementation of the IA was fundamentally changed due to the contextual developments. Investment was halted, TC cancelled and policy work intensified. At its closure, the TI of the IA was downgraded to 40 – this 'Satisfactory' assessment would have probably been still too generous measured against the original set of benchmarks, yet the justification mentions its '*acknowledging the significant efforts of the Banking team on policy dialogue for sector turn-around*' in this rating. The first wind farm project after the break in investment (Potegowo, 2019) received an ETI of 100, which includes '*uplifts for scale, innovation and policy dialogue*'[xx] – yet, its justification of policy dialogue transition relies on the past achievement of the tax reversal from 2018, and the project only foresees '*to remain involved*' with the key stakeholders with an indicator of success being '*no changes made to the Polish tax regime*' with adverse impact on the RE sector. While there may have been past policy achievements that would warrant formal TI recognition, rewarding follow-up projects with high ETI based on these past achievements without any specific PD objectives is an unsystematic solution that incentivises current substandard reporting on policy matters.

Operational results and transition impact

Inputs & Outputs

Projects approved in the Energy sector in Poland in the period 2011-2019 amounted to investment volume of over €850m. There was however a significant slowdown in the latter years due to the Bank's disengagement from the sector following adverse regulatory developments.

Physical implementation of projects was completed largely within expected timelines and budgets. The technical cooperation (TC) project planned under the IAPR was largely cancelled, with only one assignment out of four implemented. Policy dialogue was active throughout the evaluation period, intensifying under the IAPR to counteract adverse regulatory changes.

Outcomes & Transition Impacts

The projects resulted in positive environmental outcomes in the cumulative installed RE capacity, RE electricity produced and corresponding CO2 savings. The Bank co-financed windfarm projects with a total of installed capacity of 578MW prior to 2016; additional two windfarms approved in 2019 are under construction with a combined capacity of 258MW.

While the Bank supported projects financed limited recourse basis and partially exposed to market risks, some of which might not have happened otherwise, there is little evidence that this activity generated additional such projects through demonstration. The Bank has promoted the expansion of competitive markets in Green Certificates and electricity, in keeping with its transitional mandate.

The Bank contributed to increased private sector participation in RE generation both directly through the co-financing of windfarm projects and indirectly through increasing distributors' capacity for RE connections. The overall objective of market share of state controlled RE production to remain below 20% was however not achieved by the IAPR closure.

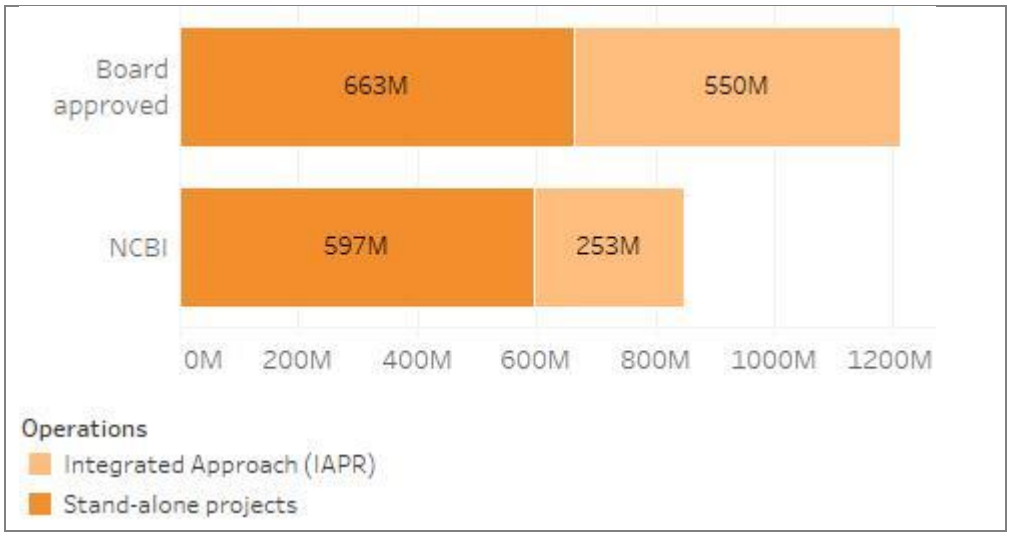
There was active policy dialogue conducted throughout the evaluation period, with strengthened focus under IAPR and intensifying after 2016. It contributed to the overall transparency of the new auction system and its successful implementation, and to the reversal of estate tax on windfarms in 2018.

NB: this section presents a summary discussion of results drawing on the detailed overview per project presented in Annex 2

Inputs & Outputs

Projects approved in the Energy sector in Poland in the period 2011-2019 amounted to investment volume of over €850m. There was however a significant slowdown in the latter years due to the Bank's disengagement from the sector following adverse regulatory developments, leading to underachievement on investment expectations under the Integrated Approach to Polish Renewables (IAPR). In the period 2001-2013 five wind farm projects and one re-financing and extension of a biomass generation unit were approved in the private portfolio, with investment of €408m. In addition, a gas-firing (CCGT) unit and an investment into a distribution network were made in the state portfolio, with total Bank investment of €130m. In 2014 the IAPR was approved, with the indicative expectation of €400m investment in renewable generation and €150m in strengthening electricity grid in the period 2014-2018. The expectation was largely not met in the renewable generation sector, where four wind farm projects approved in 2014 and 2015 represented Bank investment of under €136m. Following the 2016 adverse regulatory changes, the Bank halted its engagement in the renewable generation development, and there were no further projects before the IAPR closure. Investment into electricity grid was achieved with one project of €117m approved in 2017. In the post-IAPR period after changes in the regulations, the Bank restarted approvals of new investments in 2019 with two wind farm projects approved, amounting to Bank investment of €59m.

Figure 12: Amount Board approved vs. NCBI (€)



Physical implementation of projects was completed largely within expected timelines and budgets. Pre-IAPR, there were five wind farm projects financed Golice (38MW installed capacity), Kukinia (53MW), Orla (one year delay, 38MW), Pawlowo (cancellation of the second phase, 80MW installed (120MW planned)), PEPSA portfolio (extended to 117MW (planned 104MW)); **total co-financing for 326MW newly installed wind capacity**. In addition, there was an investment for the refinancing and further extension of Konin Biomass co-firing facility, implemented with some delay. On the other hand, project for the construction of an 268MWt gas-fired (CCGT) unit was unsuccessful and did not achieve physical completion (commissioning) before its prepayment in 2017 at which time monitoring ceased. The Bank also contributed to the financing of a large (€1.3bn) investment programme of Energa, an electricity distributor, for an upgrade and extension of the distribution network, including new lines for RE connections and smart metering installations. These investments were made with some modifications to the original plan and related budget reductions.

In the framework of the IAPR, four further wind farm investments were made some with changes to outputs to original plans; Darlowo (reduced capacity to 62MW (planned 74MW)), Radzyn (reduced to 36MW (planned 39MW)), Polenergia (reduced to 48MW (planned 100MW)), and Banie (50MW and extension of additional 56MW); **total co-financing for 252MW newly installed wind capacity**. In addition, an investment was made into a capital investment programme of PGE, an electricity distributor, addressing connection capacity for new RE sources, reduction of losses, and modernisation. The investment programme was delivered with some modifications.

In the post-IAPR period by the end of 2019 two new projects were approved in wind generation and commenced physical implementation; Potegowo (expected 220MW installed capacity, mostly finalised) and Szymankowo (expected 38MW).

The technical cooperation (TC) project planned under the IAPR was largely cancelled, with only one assignment out of three implemented (ca. 17% of original budget). The rationale behind the development of Integrated Approaches is to address systemic/ transitional changes in a more comprehensive rather than project-by-project manner. This allows for adopting medium-term perspective and objectives and devising the use of complementary instruments such as TC and policy dialogue at the IA level rather than tying them to individual projects. The IAPR rested on a three prong approach to the Polish renewables sector: i) investment in private sector renewable developments and into the electricity grid to support its strengthening for RE connections; ii) technical cooperation assignments to assist both the regulator and the grid operators; and iii) policy dialogue to promote appropriate regulatory and investment climate for renewables.

The TC project was first redesigned in 2016 following the Polish government's decision on the new RESS being based on auctions, and eventually two out of three of the TC assignments were cancelled following the adverse regulatory developments. From the three TC assignments (€375k total budget,

with €250k allocated from donor funds) planned and approved under the IAPR only one (€65k) was implemented:

- Support to build capacity of the electricity regulator (€125k) – redesigned into two assignments:
  - Regulatory TC: Interpretation and Transparency (€65k) – implemented;
  - Regulatory TC: Regulatory Best Practice (€60k) – cancelled;
- Support to build capacity of distribution system operators (DSOs) (€250k, with 50% co-financing) – cancelled;

The TC assignment implemented delivered a report by an external consultant on the interpretations of the new RE law. The TC was delivered between 2Q2016 and 1Q2017 and provided legal interpretations for the new RESS prior to the pilot auction. It was aimed at providing appropriate communication to auction participants about the new system. According to the team, the Regulator (ERO) expressed appreciation for the technical expertise delivered, and the ERO was also responsible for its publication and dissemination ahead of launching the new auctions for RE.

Policy dialogue was active throughout the evaluation period, intensifying under the IAPR to counteract adverse regulatory changes. In the period of 2011-2014 (pre-IAPR), policy dialogue activities are reported to have included: Bilateral working level meetings with Ministry of Economy; Official letters to the Polish Deputy Prime Minister and the Minister of Economy; High level meetings with the Polish authorities, including with the participation of the First VP, President, Board visit, Policy Dialogue Mission organised jointly with the World Bank, and Participation in RE conferences and investment forums.[xxi] During the IAPR period the policy dialogue activity intensified, in conjunction with the Bank's withdrawal from further financing of private sector operations and cancellations of planned TCs. The main objective of the PD was the reversal of the most prominent retroactive change that had negative consequences for existing wind installations, the real estate tax. Activities are reported to have included several meetings with Polish authorities together with meetings at the level of the Bank's President and additional engagement by the team with EU authorities.[xxii]

Outcomes

Commercial viability

Commercial viability of windfarm projects was part of their transition rationale, underpinning the expectations of demonstration effects. Commercial success, while normally a standard expectation of sound banking rather than transition impact, was the underlying source of expected demonstration effect of the wind projects in the evaluation period. After 2011 when the government announced that changes will be made to RESS, there was a context of uncertainty as to what the new system will be and how it will influence market conditions for renewable energy producers. The rationale behind the 'demonstration effect' transition expectations was that showing new wind installations being commercially successful in the context of uncertainty would provide confidence to other investors in developing new wind farms in Poland. While in 2014 when the IAPR was approved the investment in the sector was still relatively strong, the rationale behind the Bank's expectations of demonstration effect was focused on non-recourse financing of projects and promoting the exposure of projects to market risk.

Most windfarm projects underperformed their financial projections due to a variety of internal and external factors and their financial sustainability was endangered by adverse regulatory changes in 2016. Most wind farm projects were underperforming financially compared to projections.

This was due to a combination of compounding factors, culminating with the introduction of additional estate tax on wind farms in 2016:

- Many projects' electricity generation projections were overestimated; This was true especially for the initial batch of projects when specific Polish wind conditions data were not available or accurate. This issue improved in the later years with the sector development and increased availability of accurate local data.
- Prices of electricity and GCs were lower than projections. Low prices of electricity in about 2015-2017 were due to decrease of coal and carbon prices. GCs suffered from over-supply due to the inherent features of the system, including the lack of distinction of different technologies, and their award to the biomass co-firing installations which grew in popularity in Poland.

- Regulatory changes in 2016 had further negative effects on the sector: These changes resulted in additional cost for the projects as an additional tax was applied to wind farms, and further contributed to the downturn in GC prices. The drop in GC prices also led to the drop of the levels of the 'substitution fee' payable in lieu of purchasing GCs. These developments led to off-takers making significant losses on their long-term off-take agreements. While publicly owned off-takers were unwilling to hold up the offtake arrangements and cancelled or challenged contracts, private off-takers were unable to sustain the large difference between off-take and market prices without continuous support by their parent group affecting their creditworthiness.[xxiii] A number of projects in the EBRD portfolio were transferred to Corporate Recovery during this time.
- After 2018 the financial outlook for projects and generally the sector improved: the estate tax on wind farms was reversed; there were amendments made to the GC scheme, including the reduction of possibility to pay substitution fee and rising GC redemption requirements; demand for GCs led to increase in their price; and the wholesale price of electricity grew following higher CO2 emission allowance prices and higher coal prices. The Bank supported its projects through the difficult period (see above in Additionality), and all projects were eventually returned from Corporate Recovery by early 2021, after returning to profitable operations.

While the Bank's projects returned to financial stability, from the perspective of commercial success as a source of demonstration effect in a specific context, it is not clear that the performance of the projects would have had the desired outcomes in the investment decisions of private investors as expected.

Environmental outcomes

The projects resulted in positive environmental outcomes in the cumulative installed RE capacity, RE electricity produced and corresponding CO2 savings. The nature of the projects was such that their physical implementation was inherently connected to environmental outcomes. The reporting of the specific achievements by each project is not systematic, leading to aggregate reporting (such as for CSDRs or Transition performance reports) relying on the GET database. This is largely inaccurate due to changes in projects' implementation and actual achievements compared to projections, which are not reflected in the GET data. Apart from the issue of inaccuracy the problem in this approach is conceptual, as the GET data represents commitments and ex-ante expectations, and therefore should not in any case be used in reporting of results, even at output level. Data for individual projects collected on best effort basis where available are presented in the results annex to this case study. Installed RE capacity is the most reliably available and verifiable indicator – the Bank co-financed windfarm projects with a total of installed capacity of 578MW prior to 2016; additional two windfarms approved in 2019 are under construction with a combined capacity of 258MW.

Transition Impacts

Demonstration effects

While the Bank supported projects financed limited recourse basis and partially exposed to market risks, some of which might not have happened otherwise, there is little evidence that this activity generated additional such projects through demonstration. The context of regulatory uncertainty was consistently emphasised as the key driver of the need for EBRD presence throughout the period. In the earliest years the emphasis of demonstration was on building a critical mass in the wind sector – e.g. Kukinia "*helps to build a critical mass in the wind sector, and sends a strong demonstration signal especially in the light of the prolonged uncertainties linked with the expected changes in the regulatory environment*."[xxiv] Following projects were increasing their emphasis on promoting specifically installations based on non-recourse project finance and those exposed to market risks – e.g. Radzyn "*merchant nature to demonstrate that lenders are willing to take risks of price volatility on the market. This is especially significant in the current market conditions that are marked by regulatory uncertainties.*"[xxv]

The somewhat counterintuitive underlying rationale of attracting investors into the context of government-generated regulatory uncertainty is never quite discussed in the project documents; it is rather taken as a given that the promotion of RE is the only obvious solution in the context of high carbon intensity of the existing generation and inevitable Europe-wide climate action targets. In its projects the Bank was not unaware of the risks, and from about 2013 the projects were more conservatively structured to reflect this. However in most projects the projections of electricity prices

developments were still overestimated, which decreased their ability to weather the regulatory risks when they materialised.

It is however not clear that demonstration was needed in the period pre-2015 overall, the sector registered not insignificant investment inflows, overwhelmingly from private sources (see above in Additionality). Given the uncertainty of the upcoming system of support, rather than retreating from the sector investors were aiming to finalise projects to make them eligible for the GC-based incentives of the out-going RESS. While the project documents argue that state-owned utilities were gaining market share in wind generation, this was primarily through takeovers of existing installations rather than via investment in greenfield development. A study of financial flows in the sector reports that state-controlled energy companies took over 13 wind farms with a total capacity of 476MW for just under PLN 3bn but all the acquired farms were built before 2013 by private entities.[xxvi]

The projects' own monitoring indicators, based on a simple observation of new projects with certain characteristics being closed in the sector, did not return much success to underpin any expectations of demonstration effect:

- *Closing of at least two privately owned project financed large scale small/medium scale (50-100MW) wind farm projects in Poland without IFI financing* – Orla; assessed as Achieved but listing two wind farms financed by the Bank Ochrony Srodowiska (BOS), which while not an IFI is a majority state-owned environmental bank.
- *Closing of at least two privately owned project finance deals for small/medium scale (50-100 MW) wind farm projects in Poland with commercial banks' involvement* – PEPSA; assessed as Achieved by means of listing other EBRD projects;
- *Closing of at least three privately owned project-financed large scale (100MW or above) wind farm projects in Poland without IFI financing* – Kukinia,, Orla, Pawlowo, PEPSA; assessed as Not achieved; sometimes considered Delayed by TIMS, noting that this type of large project is expected to return to the market when new RESS system is in place, undermining its own transition rationale which was based on attracting investors into the regulatory uncertainty;
- *Closing of two wind farm project finance deals before the practical implementation of the revised energy support system* – Darlowo; Despite acknowledging lack of commercial success (Not achieved), which was supposed to form the basis of the demonstration effect, TIMS considers the demonstration transition objective of this project 'Partially achieved' based on closings of multiple new wind farm projects in 2015.
- *Future closing of three wind farm project deals under a project finance structure in Poland without IFI financing* – Radzyn; assessed as Not achieved.
- *Closing of another two wind farm financings without IFIs involvement for merchant projects qualifying for the green certificates support scheme* – Polenergia; assessed as Achieved despite the fact that demonstration effect is unclear given that the project itself did not actually complete the three wind farms that were to serve as demonstration '*due to the short time remaining to commission wind farms being eligible for Green Certificates*', and was partially cancelled.
- *Closing of financing for other two wind farms based on limited recourse basis without IFI involvement* – Banie; assessed as Not Achieved; noting that due to the regulatory uncertainty that continued during 2016-2017 and implementation of new adverse regulations for renewable sector, Banie project was the sole and the last wind farm financed in Poland in 2016.

Likewise, the self-assessment of the seven windfarm projects from 2013-2015 concluded "*The objective of proliferation by Sponsors and/or other independent power producers of similar projects in Poland and the CEE region was only partly met as most Sponsors fell short of completing additional projects due to the regulatory uncertainty. However, some existing clients have participated in the 2018 auctions and/or are looking to participate in the 2019 auctions*."[xxvii]

Expansion of competitive markets

The Bank has promoted the expansion of competitive markets in Green Certificates and electricity, in keeping with its transitional mandate. The volatility of prices leading to some off-take contract cancellations facilitated further market participation. The previous RESS, in place for all of the windfarm projects until 2016, guaranteed the off-take of GCs and electricity from renewable sources at regulated prices. EBRD promoted in its projects partial or full participation in competitive

markets for bout GCs and electricity, to facilitate expansion of competition and transparent market price setting mechanisms. The objective was also to send a signal to commercial banks that fixed-price off-take contracts are not necessary for project financing, especially as these long term contracts were increasingly more difficult to secure given the regulatory uncertainty. For example Orla project document argued that it "*will be a true limited-recourse financing with all its output (i.e. both electricity and Green Certificates) sold at market prices. This contract feature allows the Project to benefit from the increase in electricity prices. Up to date such arrangements were not accepted by banks, unless there was additional support offered by a strong sponsor*."[xxviii]

Most windfarm projects included elements of selling outputs through off-take contracts with traders or at market prices. From about 2015 the significant decreases in prices in both GCs and electricity compare to projections started to cause financial difficulties even for projects with secured off-take contracts. Off-takers were incurring losses on their long-term off-take agreements. Publicly owned off-takers cancelled or challenged contracts, leading to periods of legal proceedings and insecurity of revenues. Private off-takers were unable to sustain the large difference between off-take and market prices without continuous support by their parent group affecting their creditworthiness.[xxix] Some of the projects had to rely on the Sponsor's support during this time and the Bank facilitated restructurings, some of which increased the exposures to market prices. The reduction of fixed off-take contracts therefore led to additional participation in competitive markets as projects were forced to sell their output directly.[xxx] Electricity prices recovered after 2018 and projects likewise regained financial stability. Support through GCs is being phased out and new projects are no longer eligible for it.

Private sector participation

The Bank contributed to increased private sector participation in RE generation both directly through the co-financing of windfarm projects and indirectly through increasing distributors' capacity for RE connections. With the approval of the IAPR, the objective of supporting the market share of private sector RE producers became more pronounced. The IAPR declared a foremost focus on "*promoting private sector investment in the Polish renewable energy sector and therefore counterbalance the increasing role of state-controlled companies in this subsector. This is especially significant under the current market conditions which are marked by regulatory uncertainty. Private players have sold some of their assets to Polish state owned utilities and there has been an increase in state-controlled utilities' market share from 4% in 2011 up to 20% in 2013*."[xxxi] The IAPR eligibility for supporting new RE investments was only for private sector companies as independent energy producers, and the Bank was also promoting market-based elements in the projects (see above). In addition to financing new RE installations, the IAPR's objective was to also alleviate the bottlenecks in grid access and capacity. Pre-IAPR project with Energa was later restructured to 'allow further commercially financed grid investments.' Under the IAPR a project with PGE financed a large investment programme with the objective of increasing the connection capacity of new RE sources and improving the grid assets and management systems related to necessity to control dispersed generation.

The overall objective of market share of state controlled RE production to remain below 20% was not achieved. The Bank co-financed private wind capacity of some 578MW through its pre-2016 projects, and grid investments were delivered to allow for improved RE connection capacity. At the closure of IAPR it was reported that that between 2013 and 2018 there was an increase in nearly 3GW in connected RE capacity by the distribution companies. However, due to the break in private investments in the sector in 2015-2017 the market share of private producers overall did not grow at a pace to achieve the objective of below 20% of state controlled RE generation. The project's self-assessment in 2019 reported that the state-controlled market share was at about 40-50% due to the limited additional investments by private entrants. With the start of the larger-scale RE auctions and resumption of private investment after 2018, this share could be somewhat decreasing.

Transfer of skills

The transition objectives in skills transfer were not achieved due to the cancellation of the planned technical cooperation. Transfer of skills was an integral part of the expected transition impact of the IAPR. It envisaged capacity building activities for both the energy regulator (ERO) and the distribution companies. The IAPR noted that the Polish grid operators lacked experience in managing electricity generated by RE sources, and planned a TC assignment to facilitate exchanges between them and their counterparts in Western Europe to allow for the uptake of international best practice. Similar exchanges were also planned between the regulator and their counterparts. The objective was to "*address technical challenges related to the need for strengthening, redesign and adoption of new*

management solutions for the electricity grid." In addition, a TC assignment was to finance a consultant to analyse and provide recommendation on measures to resolve the current bottlenecks and technical problems with connection of renewable generation to the grid. These TCs were however cancelled due to the Bank's disengagement from the sector after 2016, and their objectives can therefore be considered as not achieved.

Regulatory framework

There was active policy dialogue conducted throughout the evaluation period, with strengthened focus under IAPR and intensifying after 2016. While reporting on the specifics of the policy engagement has not been comprehensive, the following contributions are apparent:

- The Bank's **initial focus was to ensure the incorporation of a transition period for projects under construction, and to protect the renewable energy sector from retroactive changes** when new RESS is implemented**.** Retroactive changes were envisaged in the early proposals of the new RESS. Following multiple Bank's interventions (as well as strong opposition from other stakeholders) the government withdrew from retroactive changes, which was considered the key achievement of the Bank's policy dialogue in this respect prior to the IAPR. The IAPR reported: "*As a result of multiple meetings held and official letters sent to emphasise the need to provide investor security, the regulatory authorities have engaged external consultants to assess the retroactive aspects of the regulatory change*. *The Bank's voice (supported also by other sector stakeholders) was acknowledged by the authorities when they withdrew proposals for retroactive changes to RESS*. *The draft law, as submitted for Parliamentary approval, now incorporates a transition period for the proposed changes and an explicit protection of projects constructed under the existing regime*."[xxxii]

- The TC implemented under the IAPR in 2017 provided legal interpretations of the new RESS prior to the new auctions being held (see above in Outputs). This **contributed to the overall transparency of the new auction system and its successful implementation**. In addition, outside the TC, EBRD and the Energy Community Secretariat have issued joint Policy Guidelines to help countries design and implement competitive selection processes for supporting renewable energy with which the Polish auctions are largely compliant.

- Despite the policy engagement with the government and relevant stakeholders **adverse and retroactive regulatory changes** to the sector were implemented in 2016**.** The Bank responded by intensifying policy engagement combined with the withdrawal of further investment as well as TC cancellations. The Bank has continued to emphasise to the authorities the need for undisrupted continuation or phase out of the green certificate scheme to allow confidence in the sector including consultation with relevant stakeholders**.**[xxxiii] One of the main outcomes of the policy dialogue was the **contribution to the reversal of the real estate tax on windfarms in 2018**. This change among other developments led to the return of confidence and strong increase of private investment to the sector.

- In the most recent years (2019-2021), the team **continued active policy dialogue and involvement** with relevant stakeholders both on the side of the authorities and private sector. This included verbal feedback to the Government and stakeholders on the draft off-shore wind regulation regarding local contents requirements; statement of EBRD position on the distance rule for on-shore wind in the UN Global compact report; and discussions with the Ministry of Climate on the proposed amendment the RES Act.

Box 1: Lesson identified from policy engagement

While EBRD might not have sufficient political leverage in larger countries to directly influence authorities' decisions, it is critical to continue policy engagement with a wide range of stakeholder groups and (for EU countries) with the European Commission so that EBRD's view can be taken into consideration in wider discussions and therefore significantly contribute to positive changes.

At approval the Bank expected to focus policy dialogue on future renewables schemes. Retroactive changes were considered unlikely and (if at all) of lower impact. Stress cases only included removal of partial support rather than the majority of support being abandoned. Due to adverse changes to existing schemes directly affecting the Bank's portfolio and the entire sector, the Bank needed to engage with authorities together with a wide range of stakeholder groups that were involved in those projects.

The Bank's intervention had initially not resulted in any reversal of changes. However, the Bank persistently continued the dialogue and at the same time also openly expressed its disappointment to the other stakeholders and engaged in further discussions with those. Importantly, the Bank also constructively worked with affected private sector clients to adjust the financing structure to the new circumstances. Given the political nature of changes the Bank could only deliver effective policy dialogue by bringing a wide range of stakeholder groups on its side and leverage its ties to e.g. the European Commission or NGOs to ensure that the Bank's views are taken into consideration. As part of this making sure that affected private sector clients are treated with respect and with open minded approach by the Bank helps to pass the consistent message and work with stakeholders to find solutions.

Source: Self-assessment of windfarm projects; OPS19-865 (2019)

[i] WiseEuropa (2020); p.19
[ii] Ibid. p.29
[iii] E3G (2017); p. 19
[iv] The National Energy and Climate Plan for 2021-2030: Objectives and targets, and policies and measures
[v] Energy And Climate Policy (ECP) Scenario; Impact assessment of policies and measures
[vi] BDS13-015: Poland: ORLA Wind Farm; p.7
[vii] BDS14-255: Poland: Integrated Approach to Polish Renewables; p.13
[viii] BDS14-255: Poland: Integrated Approach to Polish Renewables; p.7
[ix] BDS17-050: Poland: PGE Grid Enhancement For Renewables
[x] BDS14-255: Poland: Integrated Approach to Polish Renewables
[xi] WiseEuropa (2020); p.28
[xii] Meeting of the Board of Directors of 12 February 2013; Directors' Advisors' Questions Poland: ORLA Wind Farm
[xiii] OPS19-865: Operation Performance Assessment Pawlowo Wind Farm, Orla Wind Farm, PEPSA Wind Portfolio, Darlowo Wind, Radzyn Wind Farm, Polenergia Wind Portfolio, Banie Wind Farm
[xiv] BDS15-030: Poland: Polenergia Wind Portfolio; p.10
[xv] OPS19-865: Operation Performance Assessment Pawlowo Wind Farm, Orla Wind Farm, PEPSA Wind Portfolio, Darlowo Wind, Radzyn Wind Farm, Polenergia Wind Portfolio, Banie Wind Farm
[xvi] Ibid.
[xvii] WiseEuropa (2020); p.29
[xviii] BDS15-045 (Final) Country Strategy Updates 2015
[xix] CS/BU/19-07: Annual Report on Transition Performance 2018
[xx] BDS19-049: Poland: Potegowo Wind;
[xxi] Meeting of the Board of Directors of 15 October 2014 Directors' Advisers' Questions; Poland: Integrated Approach to Polish Renewables (BDS14-255)
[xxii] OPS19-865: Operation Performance Assessment Pawlowo Wind Farm, Orla Wind Farm, PEPSA Wind Portfolio, Darlowo Wind, Radzyn Wind Farm, Polenergia Wind Portfolio, Banie Wind Farm
[xxiii] Credit analysis Kukinia Wind 2020
[xxiv] BDS12-228: Poland: Kukinia Wind
[xxv] BDS14-329: Poland: Radzyn Wind Farm
[xxvi] WiseEuropa (2020); p. 29
[xxvii] OPS19-865: Operation Performance Assessment Pawlowo Wind Farm, Orla Wind Farm, PEPSA Wind Portfolio, Darlowo Wind, Radzyn Wind Farm, Polenergia Wind Portfolio, Banie Wind Farm
[xxviii] BDS13-015: Poland: ORLA Wind Farm
[xxix] Credit analysis Kukinia Wind 2020
[xxx] OPS19-865: Operation Performance Assessment Pawlowo Wind Farm, Orla Wind Farm, PEPSA Wind Portfolio, Darlowo Wind, Radzyn Wind Farm, Polenergia Wind Portfolio, Banie Wind Farm
[xxxi] BDS14-255: Poland: Integrated Approach to Polish Renewables; p.8
[xxxii] BDS14-255: Poland: Integrated Approach to Polish Renewables; p.17
[xxxiii] OPS19-865: Operation Performance Assessment Pawlowo Wind Farm, Orla Wind Farm, PEPSA Wind Portfolio, Darlowo Wind, Radzyn Wind Farm, Polenergia Wind Portfolio, Banie Wind Farm

ANNEXES

Annex 1. External sources

Documents

Climate change: what the EU is doing; https://www.consilium.europa.eu/en/policies/climate-change/

E3G (2017): Briefing paper: Climate & Energy Snapshot: Poland; The Political Economy of the Low-Carbon Transition

Energy And Climate Policy (ECP) Scenario; Impact assessment of policies and measures; Annex 2 to the National Energy and Climate Plan for 2021-2030; p.31
https://ec.europa.eu/energy/sites/ener/files/documents/pl_final_necp_part_5_en.pdf

European Commission (2020): Country Report Poland 2020, 2020 European Semester: Assessment of progress on structural reforms, prevention and correction of macroeconomic imbalances, and results of in-depth reviews under Regulation (EU) No 1176/2011 (SWD(2020) 520 final)

Renewable Energy 135 (2019) 232-237: Current status of wind energy policy in Poland

The National Energy and Climate Plan for 2021-2030: Objectives and targets, and policies and measures; https://ec.europa.eu/energy/sites/ener/files/documents/pl_final_necp_part_1_3_en.pdf

WiseEuropa (2020): Alternating Current: Landscape of climate finance in the Polish energy sector

Data sources

EU Energy Country datasheets: https://ec.europa.eu/energy/data-analysis/energy-statistical-pocketbook_en

Annex 2. Results by operation

Due to similarities in approach and transition rationale/ objectives, **projects are clustered as follows:**

- Projects approved pre-IAPR
- Projects under the Integrated Approach to Polish Renewables (IAPR)
- Projects post-IAPR

Wind farm projects approved pre-IAPR

40782 Golice Wind Project (BDS11-231)

43819 Kukinia Wind (BDS12-228)

44335 Pawlowo Wind Farm (BDS13-252, CS/FO/13-27, BDS13-278)

44923 PEPSA Wind portfolio (BDS13-195; BDS13-195 (Addendum 1); BDS13-195 (Addendum 2))

OUTPUTS		
Expectations	**Delivery**	**Largely delivered**
Golice • construction, commissioning and operation of a **38 MW Golice wind farm** comprised of 19 Gamesa G90 2.0 MW wind turbines located in Slubice region in western Poland; commissioning of the wind farm expected in February 2012	**Golice** • **Delivered;** Construction completion and commencement of the operations were achieved in 03/2012;	
Kukinia • construction, commissioning and operation of **52.9 MW Kukinia wind farm;** final tests and the **commissioning** of the wind farm expected in December 2013; second wind farm constructed by RPG in Poland, following the successful construction of the Tychowo Project cofinanced by the Bank in 2009.	**Kukinia** • The final tests and the commissioning of the wind farm was **completed by 2013**; Both physical and financial completion were achieved **ahead of time and within budget**. [PMM]	
Orla • construction, commissioning and operation of a **37.5MW Orla wind farm;** commissioning of the Project **expected in October 2013**	**Orla** • **Delivered**; **one year delay** due to a change in shareholder [OPA]	
Pawlowo	**Pawlowo**	

• The Project is a **greenfield wind farm in north-west Poland totalling 120MW**, using 80 Acciona 1.5MW turbines. The Pawlowo wind farm is being developed in two phases: **Phase I (79.5MW)** located in the municipality of Gołańcz, which is **already operating under testing period**, and **Phase II (40.5MW)** located in the municipality of Budzyń, which is **at the last stage of development** and it expected to be constructed and to become **operational by December 2015**. • **90% of the Bank's loan will constitute retroactive financing** of short-term bridge loans provided by the Sponsor during construction	• **Not delivered**; second phase was ultimately not pursued given the ending of the previous support system and uncertainty around the new system; **Installed capacity therefore at 80 MW instead of the expected 120MW;** • Prepaid in 2018
PEPSA • Construction, commissioning and operation of **three wind farms** located in northern and eastern Poland with the **total capacity of 103.5MW**, using 45 Siemens 2.3 MW turbines**;** • **Phase I (66.7MW**) is to be constructed by the **end of 2014**, while **Phase II (36.8MW**) is expected to be constructed **by the end of 2016**. • In **2014 an** increase of the EBRD senior debt commitments to accommodate a **13.8MW extension to the project**	**PEPSA** • **Delivered 117MW capacity**; The wind farms were **completed largely within budget and on schedule between February 2015 and January 2016**. The Project's initial operating results exceed expectations, with the 2017 power production exceeding P50 forecasts.
OUTCOMES	
Expectations	**Largely achieved**
For **GET reported indicators** (expectations) and delivery (where data available) see **overview table below**. This section contains only **some relevant notes/ observations.**	

Golice

- There is a **large discrepancy between GET reported** electricity production estimate for this project (283,000 MWh/y) and **that of the Board project document** – P50 = 83,334 MWh/yr
- The project was **underperforming expectations** from the outset due to lower than expected wind generation. The **production for the wind farm was overestimated at the time of closing** and has been revised by the lenders technical advisor after 1st year of operation to 72,649 from 83,334 [TIMS]; Reported actual production Second year of operation: 70,710 MWh production; third year of operation: 66,714 MWh
  - **CO2 saving underperformed in line with the underperformance of electricity production:** Second year of operation: 45kt, third year of operation: 42.5kt vs. expectation 55 kton/yr

Kukinia

- There is a **discrepancy between the expected CO2 savings reported though GET (77 kton/yr) and those reported in the project document (84 kton/yr).** According to TIMS, even the latter was **over-achieved** – 2014: 127 kton; 2015: 154 kton; 2016: 124 kton

Orla

- There is a **discrepancy between the expected CO2 savings reported** though GET (44 kton/yr) and those reported in the project document (57.4 kton/yr). Targets **reported overachieved** – average CO2 annual savings in 2015-2018 at 70kton [OPA]

Pawlowo

- Expected second phase of installation (40MW) did not materialise, therefore **expectations of installed capacity, and CO2 savings were not achieved**

TRANSITION IMPACT		
Expectations	**Achievement**	
Demonstration effect of replicable behaviour and activities		**Commercially largely underperforming;** **Some commercial co-financing;** **Contribution to attracting private investment into sector not clear**
Commercial viability Commercial viability/ success, while normally a standard expectation of sound banking rather than transition impact, was the underlying source of expected demonstration effect of the wind projects in this period. After 2011 when the Government announced that changes will be made to the renewable energy support system, there was a **context of uncertainty** as to what the new system will be and how it will influence market conditions for renewable energy producers. The rationale behind the 'demonstration effect' transition expectations was that **demonstrating new wind installations being commercially viable** in the context of uncertainty and **would provide confidence to other investors in developing new wind farms in Poland**. For selected financial indicators (where data available) see **overview table below**.	M**ost projects were at least somewhat underperforming financially compared to projections**. This was due to a combination of factors, including: - Over-estimated wind generation projections; this was true especially for the initial batch of projects when specific Polish wind conditions data were not available or accurate. This issue improved in the later years with the sector development and increased availability of accurate local data; - Lower prices of electricity and GCs than used in projections; - Eventual change of regulations had significantly negative effects on financial viability. When new **regulations were eventually introduced in 2016, they had significant adverse effects** on the wind farms in the portfolio, and endangered their financial stability. The changes introduced to the renewable energy regulation such as the Distance Law restricting the space available for new developments and higher real estate tax applied to renewables, had negative effects on the commercial viability of operating renewables. The negative regulatory changes had (a) resulted in additional cost for the projects as an additional tax was applied to wind farms and (b) led to a downturn in green certificate prices due to oversupply. These were accompanied by low electricity prices during 2015 to 2017. Some of the changes were since then reversed and projects regained financial stability, with projects returned from Corporate Recovery to Banking operations. Positive outlook on financial viability is also supported by increases in the prices of electricity and green certificates in 2019-2020**.** However, from the perspective of commercial viability as a source of transition for demonstration effects in a specific (pre-2016) context, this turnaround is no longer material.	

	Golice • The Project has been **underperforming from the outset due to lower than expected wind generation** (not exceeding P90) and the high opex, but the company was still able to service its debt obligation thanks to a favourable off-take prices; • After the off-taker (ENEA) unilaterally terminated the off-take agreement, the project was transferred to **Corporate Recovery in 2017** **Kukinia** • Was **underperforming due to higher assumptions of production and off-take prices** than materialised: market electricity prices actual €64/MWh vs €74/MWh projected (16% above), GC market prices actual €29/MWh vs €67/MWh projected (2.3x above) for 2019 [Credit] • Due to adverse developments in the regulatory framework leading to off-takers terminating agreements and challenging their validity through arbitration and legal proceedings, the project was provisioned and **transferred to Corporate Recovery**; • Thanks to some **positive shifts in the base parameters of the Project** (no payment default, resolving of tax and offtake agreement litigations, rebound in black energy and GC markets in 2018-19, sufficient cash flows to service debt under the current offtake terms and market conditions), in December **2019 the Bank decided to release the provision**. [Credit] **Orla** • In 2017, the **off-taker (the state controlled entity- Energa Obrot) terminated** the combined electricity-GC offtake contract generating PLN310/MWh floor price (at that point much above the prevailing market price). This action was **successfully challenged** by Orla in 2018 (under Polish arbitration proceedings) with Energa Obrot being instructed to honour the PPA contract terms, however the award is being appealed by the off-taker with the final decision pending. [OPA] • The project was transferred to **Corporate Recovery in 2017; returned to Banking in 2019** thanks to wins in court, continued improvement in market electricity prices and fully funded debt service reserve account [Credit] **Pawlowo** • Upon expiry of the three year PPA, **the generated output was sold at the regulated price to the buyer of last resort as no other long term offtake contracts were available** contrary to expected at approval and **the regulated price was then above market price**. However, the project still benefitted from a minimum price guarantee from EDPR (the Sponsor) which de facto secured debt repayment as long as the project continued operations. The Sponsor initially requested the lenders to renegotiate the terms of this guarantee to

	reduce the reliance on EDPR, but subsequently **chose to prepay the loan [OPA]** **PEPSA** • Project was put on the **Corporate Recovery watch list** and **relied on support from the sponsor** to cover its debt payment [TIMS] • 2015 **amendment to the level and mechanism of the guaranteed offtake price** for electricity and Green certificates as a **result of a decrease in market prices** and inability of the off-taker (sister company) to honour the original agreement [OPA] • **2018 restructuring** including (i) a PLN22.5m prepayment, (ii) three year tenor extension, (iii) changing the fixed price offtake agreement to reflect market prices with a set floor and (iv) adjustment of financial covenants and cash sweep levels. The restructuring has **allowed the project to operate successfully under the lower price environment compared to initial Board approval**, whilst still meeting the debt service obligations [OPA] • Financial results for 2019 improved vs 2018, outperforming the restructuring projections in terms of revenue, EBITDA and profitability. In **1H 2020, the company has recorded strong financial performance** in terms of revenue, EBITDA and profitability. This increase was driven by a combination of the increased combined production volume and higher combined price. [Credit]
Demonstration effect **Golice** • The presence of a strong Sponsor would contribute to significant growth in Polish wind energy market, thus assisting the country in meeting its EU's green energy targets. Since the renewable energy sector in Poland is still developing, the success of this operation **could potentially attract other investors to the sector.**	**Golice** • TIMS monitored this objective through an indicator of *Further closing of another three wind farm project financings in Poland under new regulatory regime* which it considered Achieved in 2014 – inexplicably so, as by that time new regulatory regime was not in place yet. It further included in its count of replications another four wind farm projects co-financed by EBRD (PEPSA, Kukinia, Pawlowo and Orla) – arguably, projects without the support of IFIs should be indicative of investor confidence that EBRD presence in Golice sought to inspire.
Kukinia • helps to **build a critical mass in the wind sector**, and sends a strong demonstration signal especially in the light of the **prolonged uncertainties linked with the expected changes** in the regulatory environment, that have put many wind energy projects on hold. • the first investment of Fund Marguerite, a long-term infrastructure financial investor, in the renewable energy sector in the Bank's countries of operations; will send a **strong demonstration signal to pension and insurance funds in**	**Kukinia** • The monitoring benchmark *of Closing of at least three privately owned project-financed large scale (100MW or above) wind farm projects in Poland without IFI financing and which at the end of 2012 have not been issued a licence and in addition to those identified in previous projects* – was in 2019 assessed as Delayed; TIMS commented that 'to date only one transaction could be recorded as meeting the target set for this benchmark, namely Phase II of the Darlowo Wind Farm (ca 100MW). The transaction was closed as a project-finance deal without IFI involvement and reaching operational stage in 2013. Further

Poland, that investment in a portfolio of well-structured renewable energy projects could be a viable investment opportunity for them	development of this type of large transactions required IFI involvement in light of regulatory uncertainty associated with renewable projects.'[TIMS] • It is not clear however, even if this benchmark was met, that contribution of Kukinia project could be established. Likewise, it is not possible to rule out some demonstration effect of the project on the market. • **Fund Marguerite has entered the Project** and remains one of two shareholders. [TIMS] Entry of **two long term investment horizon funds, investing in new Polish renewable energy project – Achieved**. Entrance of a Chinese investor into the renewable energy player PEPSA, and an earlier entrance of a private equity fund Momentum into the Orla project (signed in February 2014) [TIMS]
Orla • helps to build a **critical mass in the sector**, and sends a **strong demonstration signal especially in the light of the prolonged uncertainties** linked with the expected changes in the regulatory environment, that have put many wind energy projects on hold; • working with commercial banks to finance a wind farm project on a **limited-recourse basis with an exposure to the market prices risk** the Bank will be **demonstrating a more aggressive financing structure** that facilitates renewable energy development in Poland	**Orla** • Monitoring via *Closing of at least two privately owned project financed large scale small/medium scale (50-100MW) wind farm projects in Poland without IFI financing and which at the end of 2012 have not been issued a generation licence and in addition to those identified in previous projects* – Achieved [TIMS] At least two privately owned medium win d farm projects were closed in Poland without IFI financing, including two wind farms financed by the Bank Ochrony Srodowiska (signing in 1Q2015) with the total production capacity of 67.5MW and 51.2MW. [TIMS] • *Closing of at least one privately owned project financed large scale (100MW or above) wind farm project in Poland without IFI financing* – Delayed [TIMS] There is little to substantiate contribution/ causality w/r to these new projects. **TIMS comment** on the latter benchmark "*As the regulatory situation becomes clearer, such large projects are expected to return to the market, but the timing remains uncertain. The new auction system entered into force mid 2016, however as of today there is no visibility about auctions for large scale wind projects"* **goes against the project's own demonstration rationale** – the point was to demonstrate viability and attract investment despite regulatory uncertainty. Arguing that interest/ investment will return with certainty renders this rationale irrelevant.
Pawlowo • This second large scale project of EDPR is likely to send a **demonstration signal to the market of a successfully operating wind power generation facility in Poland;** • In the **context of the consolidation of the Polish wind generation in state owned companies**, the Project is of relevance because it will continue to supp**ort a private independent renewable wind energy producer**	**Pawlowo** • **Parallel lenders – Not achieved**; was agreed with the Board that should these banks not participate in Phase I, the Bank would finance Phase I on a sole basis, which is what happened. Due to the uncertainty in the regulatory framework the financing was closed with EBRD as the sole lender; [TIMS] • **Debt servicing without Sponsor's support** – **Not achieved**; in December 2017, the Project received the Sponsor's support to service the debt since the cash flows have been affected by a decrease in GC sales price and the introduction of RET [TIMS]

	• *Closing of at least one privately-owned project finance deal for large scale (100MW or above) wind farm project in Poland without IFI financing* – **Not achieved** [TIMS]; Once again, TIMS comment on the non-achievement of another large-scale project closing is essentially that once there is more clarity on regulations, investments should resume – this goes against the original rationale of the demonstration effects which aimed at attracting investors into regulatory uncertainty. In this respect, the **decision not to pursue the planned second phase of the installation due to regulatory uncertainty probably sent a stronger (negative) demonstration signal**.
PEPSA • Project is expected to be one of the very few projects in Poland to be financed during the **continuing regulatory uncertainty period**; the Project is expected to have an **enhanced demonstration effect**.	**PEPSA** • **Close of phase II with commercial lenders – Achieved**; EBRD was joined by BOS Bank providing PLN 238m loan as a parallel lender [TIMS] • Closing of at least two privately owned project finance deals for small/medium scale (50-100 MW) wind farm projects in Poland with commercial banks' involvement – **Achieved by means of EBRD projects** (Darlowo, Radzyn, Polenergia) [TIMS] • *Closing of at least one privately owned project finance deal for large scale (100 MW or above) wind farm project in Poland without IFI financing* – **Not achieved** [TIMS] TIMS again refers to the regulatory changes as a source of non-achievement undermining the rationale of the need for the demonstration effect in the first place.

Framework for markets		**Some parallel PD; not resolved by the end of TI monitoring of this project**
Golice • At the beginning of 2011 the government hinted its intentions to am**end the current renewable energy support** system (by (i) differentiating the support level for various renewable energy technologies, and (ii) linking the level of support to the actual electricity price), however to date no official details of the **anticipated changes have been revealed creating additional uncertainty in the market. In this connection EBRD engaged in policy dialogue** raising its concern with the Polish Ministry of Economy, who replied confirming that: (i) the new bill will be subject to proper public consultation process, and (ii) the Ministry will analyse the impact the bill may have on the existing renewable energy investments	**Golice** • **Conducting public consultation process** on the new renewable energy bill – TIMS reports the Bank's active participation in the public consultation process, and meetings with/ official letter to public authorities as to the risk of negative retroactive changes that the bill might introduce. TIMS report positive changes to the draft law based on this process of Policy Dialogue. - OPA mentions as a **specific achievement** attributable to the Bank's work that the authorities hired a legal consultant who analysed the impact of the various draft measures on the existing projects – this **following the Bank's official letter**. • **Ensuring that the contemplated bill will have no negative impact** on the existing renewable energy investments: Draft law in 2014 stipulated that the existing projects will benefit from the same green certificates support system for the limited period of 15 years and will have a right but not obligation to switch to the new auction system. [TIMS] The main objective of policy in this period – preventing the introduction of retroactive changes – was not resolved in the duration of the TI monitoring of this particular project. While its TIMS monitoring gives credit to the Bank for 'no negative impact' of the new law, it was at that point still only a draft and had many future iterations. The eventually introduced changes in 2016 did indeed have negative retroactive elements to them.	
Expansion of competitive markets		**Some achieved**
Kukinia • true non-recourse financing with **all its output** (i.e. both electricity and Green Certificates) **sold to the market via an energy trader, rather than (as in case of other projects) directly to large utilities;** The energy trader – acting as an off-taker – will sell the electricity and Green Certificates in the market, creating competition to the sales of the utilities. Therefore the Project is well positioned to **challenge the existing oligopoly of the four largest Polish utilities;** as the off-taker will sell the entire output at a going market price (subject to pre-agreed floor price), such financing structure supports **liquidity increase of the energy and Green Certificates market**	**Kukinia** • Off-take contract for Kukinia Project to be signed with a trader without the need of additional sponsor support – **Achieved**; Agreement with AXPO has been signed, no additional sponsor support (on top of the standard cost overrun guarantee) was required. [TIMS] • At least 2 energy traders signing off-take contract for renewable energy projects financed under non-recourse basis – **Achieved**; On EBRD financed projects the Team had evidence of two trading companies: AXPO and Polenergia Trading, signing off-take contracts [TIMS]	
Orla • **selling the Green Certificates and electricity at market prices**, the Project will contribute to increasing price transparency of the Green Certificates market; This contract feature allows the Project to benefit from the increase in electricity prices.	**Orla** • TIMS reports other instances of windfarms selling with merchant risk financed without IFIs	

Up to date such arrangements were not accepted by banks, unless there was additional support offered by a strong sponsor; the Project will send a **signal to other commercial banks that traditionally fixed-price off-take formulas are not the necessary prerequisite** for successful financing of a wind farm	• **Achieved** – Pricing **formula included reference to market price with a floor**, however the off-taker cancelled the contract and the **project sells Green Certificates output at the prevailing market price** [OPA]

Pawlowo • The Project will be financed on a **limited recourse basis with all its output** (i.e. both electricity and green certificates) **being sold to the market via a trader**. The Sponsor will mitigate the potential risk of energy and green certificates prices volatility but other operation risks like wind performance, availability of the wind farm and operating costs will stay with the Project and the lenders • The Project is thus expected to increase the **liquidity and transparency of the price signal** in both the electricity and green certificates markets	**Pawlowo** • In December 2017 the **project received Sponsor support** to service the debt [OPA] • Sale of 100% of electricity and green certificate through the Energy Exchange – **Partly achieved**; **Following the expiry of the PPA the project sold output at the regulated price** due to the slightly higher price realised in the difficult economic situation [OPA] **From 2018**, the Borrower decided to **sell its generated electricity to the market** without any PPA in place [PMM]
PEPSA • By accepting an **off-take agreement with an electricity trader**, the Project contributes to **increasing price transparency of the Green Certificates market**. Polenergia, the off-taker for both electricity and Green Certificates, is expected to sell the output of the Project via the Polish energy exchange and/or bilateral contracts with other energy players. Polenergia shall commit to sell at least 25% of the Project output in short term contracts or via the exchange	**PEPSA** • secured **15 year offtake contract with fixed prices**, partially adjusted by CPI each year, with Polenergia Obrot (subsidiary of the Sponsor) • Polenergia, confirming its **commitment to sell at least 25% of the Project's Green Certificates** in the spot market or under short term (up to 1 year) agreements concluded at market prices and registered at the Power Exchange – **Achieved**; • However, the regulatory developments have significantly impacted the Sponsor, who has a financial obligation to support the Project; At approval the Offtake price was set at the level which was consistent with price forecasts at the time of approval. Following a decrease in combined prices in 2015, the contract was revised downwards; Since **market prices were not sufficient to service the loan, the Sponsor had to consistently inject additional money into the off-taker**, so that this trading company could honour the Offtake. The Sponsor requested the restructuring to make the project sustainable. As part of the restructuring, **offtake contract was replaced with a market contract with a guaranteed floor**. • TIMS reports that the Company is **selling substantially all electricity and GCs in the market; the PPA adjustment last year (2018) encourages this further** • Closing of two wind farm project finance deals with merchant risk in Poland without IFI financing – Achieved; At least two privately owned medium wind farm projects with merchant risk were closed in Poland without IFI financing, including two wind farms financed by the BOS Bank (signing in 1Q2015) with the total production capacity of 67.5MW and 51.2MW [TIMS] Overall, the **restructuring increased the market exposure** of the project by incorporation of a more merchant offtake structure.

Setting standards for business conduct		**Largely achieved but unclear connection to setting standards**
Golice • **Golice Project will help to save c. 54,415 tons of CO2 per year.** Transition impact is expected to come from improving standards for business conduct through the Client's **application of international best practice in its environmental impact assessment**.	**Golice** • Annual CO2 savings not achieved to expectations; **It is not clear how an indicator inherent in wind capacity installation (CO2 savings) amounts to setting standards for business conduct**. • The expected TI 'through the Client's '*application of international best practice in its environmental impact assessment'* was neither explained in the project document nor monitored/ reported on in TIMS. The project document only reported that '*The ESDD also reviewed the local environmental impact assessment and planning procedures which confirmed compliance with Polish environmental and administrative legal requirements*.', and further noted that '*EBRD will ensure that the Environmental Impact Assessments are fit for purpose and that the Company will follow the Bank's standards for public disclosure*.' Compliance with local regulations and EBRD policies/ standards does not represent transition impact, especially not in an advanced transition/ EU member country.	
Kukinia • assist in the expansion of Polish renewables to meet the EU's green energy quotas and the national target of 8,000MW installed wind capacity by 2020. It is estimated that the Project will effectively **save approx. 84,000 tonnes CO2 per annum**	**Kukinia** • CO2 savings were **reported over-achieved**, 2014: 127 kton; 2015: 154 kton; 2016: 124 kton [TIMS]	
Orla • Project will effectively save approx. **57,400 tonnes CO2 per annum**	**Orla** • Targets **reported overachieved** – average CO2 annual savings in 2015-2018 at 70kton [OPA] • There are some discrepancies in reporting – OPA reports 2016 CO2 savings 70kton vs TIMS reports 56 kton for the same year. There appear to be parallel strands of reporting on these figures, which is of concern.	
Pawlowo • save approx. **153,300 tonnes CO2 per annum** when fully operational	**Pawlowo** • **Not achieved due to cancellation of the second phase** of installation	
PEPSA • Project will effectively save approx. 179,000 tonnes CO2 emissions per annum	**PEPSA** • **Achieved;** the wind farm has been operating at close to P50 scenarios for the first three years of operation [TIMS] • OPA reported **average 265 kt/y CO2 savings** for the first four years of operations (2015-2018); this is also due to the fact that the original installed capacity was extended	

*Table 6: Selected **financial indicators** for pre-IAPR wind farms, **projected vs actual***

Orla wind farm /P50

	Revenue PLNm			EBITDA			DSCR		
	Projected	Actual	*Diff*	Projected	Actual	*Diff*	Projected	Actual	*Diff*
2014	47	-	*-100%*	39	-	*-100%*	1.5x	n/a	*n/a*
2015	47	18	*-62%*	40	13	*-68%*	1.9x	n/a	*n/a*
2016	49	29	*-41%*	40	20	*-50%*	1.9x	1.0x	*-48%*
2017	52	43	*-17%*	45	21	*-53%*	2.1x	0.9x	*-59%*
2018	52	24	*-54%*	45	6	*-87%*	2.2x	1.1x	*-50%*

Pawłowo Wind Farm /P75

	Revenue PLNm			EBITDA			DSCR		
	Projected	Actual	*Diff*	Projected	Actual	*Diff*	Projected	Actual	*Diff*
2013	33	24	*-27%*	23	19	*-17%*	n/a	n/a	*n/a*
2014	59	55	*-7%*	42	41	*-2%*	1.3x	2.0x	*56%*
2015	60	57	*-5%*	41	41	*0%*	1.4x	1.9x	*40%*
2016	70	39	*-44%*	49	20	*-59%*	1.5x	1.1x	*-26%*
2017	75	45	*-40%*	51	14	*-73%*	1.7x	1.1x	*-35%*
2018	76	n/a	*n/a*	52	n/a	*n/a*	1.6x	n/a	*n/a*

PEPSA Wind Portfolio / P50 and including extension (P75)

	Revenue PLNm			EBITDA			DSCR		
	Projected	Actual	*Diff*	Projected	Actual	*Diff*	Projected	Actual	*Diff*
2015	95	112	*18%*	81	99	*22%*	1.8x	2.5x	*39%*
2016	122	118	*-3%*	106	95	*-10%*	1.8x	1.7x	*-5%*
2017	164	134	*-18%*	140	106	*-24%*	1.9x	1.9x	*-1%*
2018	165	87	*-47%*	141	57	*-60%*	1.9x	1.5x	*-22%*

Note: Some actual DSCRs are above forecasted despite lower revenues and EBITDA. This is due to lower debt service compared to approval following either restructuring of the projects or lower debt disbursements

Source of data: OPS19-865: Operation Performance Assessment Pawlowo Wind Farm, Orla Wind Farm, PEPSA Wind Portfolio, Darlowo Wind, Radzyn Wind Farm, Polenergia Wind Portfolio, Banie Wind Farm

*Table 7: Overview of **GET reported parameters** for pre-IAPR wind farms, and **projected vs actual capacity, generation and CO2 savings***

Orla wind farm /P50

GET reporting		Installed capacity MW				Generation GWh			CO2 savings kton			
GET finance €m	**21.98**		Projected	Actual	*Difference*	Projected	Actual	*Difference*	Projected	Revised*	Actual	*Difference*
CO2e Reduced (kton/y)	**44**	2014	38	38	*0%*	100	-	*-100%*	57	74	-	*-100%*
Primary Energy Saved (GJ/y)	500,000	2015	38	38	*0%*	100	82	*-18%*	57	74	65	*-12%*
Primary Energy Saved (toe/y)	11,933	2016	38	38	*0%*	100	88	*-12%*	57	74	70	*-5%*
RE Electricity Produced (MWh/y)	50,000	2017	38	38	*0%*	100	96	*-4%*	57	74	77	*4%*
RE Capacity Installed (MW)	**38**	2018	38	38	*0%*	100	84	*-16%*	57	74	67	*-9%*

GET reporting		Installed capacity MW				Generation GWh			CO2 savings kton			
GET finance €m	**72.46**		Projected	Actual	*Difference*	Projected	Actual	*Difference*	Projected	Revised*	Actual	*Difference*
CO2e Reduced (kton/y)	**153.3**	2013	80	80	*0%*	103	51	*-50%*	-	82	n/a	*n/a*
Primary Energy Saved (GJ/y)	2,500,000	2014	80	80	*0%*	155	162	*5%*	103	124	130	*5%*
Primary Energy Saved (toe/y)	59,524	2015	80	80	*0%*	155	164	*6%*	103	124	131	*6%*
RE Electricity Produced (MWh/y)	237,000	2016	80	80	*0%*	158	157	*-1%*	103	126	126	*0%*
RE Capacity Installed (MW)	**120**	2017	120	80	*-33%*	158	187	*18%*	153	189	149	*-21%*
		2018	120	80	*-33%*	158	n/a	*n/a*	153	189	n/a	n/a

GET reporting		Installed capacity MW				Generation GWh			CO2 savings kton			
GET finance €m	**77.46**		Projected	Actual	*Difference*	Projected	Actual	*Difference*	Projected	Revised*	Actual	*Difference*

CO2e Reduced (kton/y)	**179**	2015	117	117	*0%*	228	295	*29%*	122	171	236	*38%*
Primary Energy Saved (GJ/y)	3,000,000	2016	117	117	*0%*	281	322	*15%*	150	212	257	*21%*
Primary Energy Saved (toe/y)	71,429	2017	117	117	*0%*	368	384	*4%*	197	275	307	*12%*
RE Electricity Produced (MWh/y)	334,000	2018	117	117	*0%*	368	325	*-12%*	197	275	259	*-6%*
RE Capacity Installed (MW)	**104**											

**) Revised CO2 savings: 'Projected' savings are as reported in the Board document. 'Revised' savings are the CO2 saving projections according to the current methodology using expected P75 generation and a grid factor for Poland of 0.799 tons of CO2 / MWh. [OPA]*
Source of data: GET reporting: GET database; Installed capacity, Generation, CO2 savings: OPS19-865: Operation Performance Assessment Pawlowo Wind Farm, Orla Wind Farm, PEPSA Wind Portfolio, Darlowo Wind, Radzyn Wind Farm, Polenergia Wind Portfolio, Banie Wind Farm

42240 Patnow II refinancing - Konin Biomass

OUTPUTS	
Expectations (BDS11-034)	**Delivery** — **Delivered**
Physical outputs • In August 2005 the Bank committed EUR 63 million, as part of a EUR 227 million senior loan to Elektrownia Patnow II Sp. z o.o. (EP II) for a lignite-fired power generation unit of 464 MW (OpID 32170) • EUR 80 million senior secured loan to EP II as a part of EUR 240m **refinancing package** to prepay the existing project finance loan provided by the EBRD and the group of commercial banks and the EDC and to finance the **construction of a new biomass installation and the related infrastructure at Konin power plant** - **154MWt/50 MWe** biomass installation	**Physical outputs** • The construction of the Konin biomass unit was **completed in 2012.**
OUTCOMES	
SEI/ GET contribution	**Achieved with delays**
GET reported contribution: GET Finance: €80m; Mitigation finance €80m Physical indicators **expectation (GET reported)**: • **CO2e Reduced (kton/y) 409** • Primary Energy Saved (GJ/y) 2,260,681 • Primary Energy Saved (toe/y) 53,826 • RE Electricity Produced (MWh/y) 625,881 • **RE Capacity Installed (MW) 50**	• **CO2e Reduced (kton/y) 409 – achieved with delays** (see below) • **RE Capacity Installed (MW) 50 – achieved** (see above)
TRANSITION IMPACT	
Expectations:	**Achievement:**
Demonstration effects	**Partly achieved**
Demonstration effect of replicable activities: • leads to demonstration effect provided by **applying a renewable energy solution being applied to the old, polluting lignite-fired** power plant. The project is also expected to set an **example of the use of sustainable biomass in large CHP installations**. The installation of the biomass boiler will result in a **substantial overall reduction of the CO2 emissions**; by 408,731 tons of CO2 per annum **Demonstration effect of replicable products and processes**: • demonstrate the **possibility to generate satisfactory equity returns in biomass fuelled power generation** projects in Poland	**Replication – Not Achieved**. Expectation of the **conversion of two more lignite/coal fired power units** totalling 110MWe into biomass did not materialise as per TIMS reporting – **there was only one such conversion reported**. GdF Suez shut down its 225MW coal fired unit at Polaniec power plant and replaced it with a 205 MW biomass-fired power unit, which became operational in June 2013. [TIMS] This capacity exceeds the 110MW but since the primary objective was replication/ demonstration, only one such replication by 2018 (when the TIMS was closed) means underachieving this objective. **Sustainable use of biomass – Achieved**. The level of biomass used in the biomass boiler has remained close to 100% in the years of operation. (target 80%)

• **at the Konin biomass plant to be traded through transparent** market mechanisms	[TIMS] The share of biomass of agricultural origin in 2016 remained at 20%. (target: below 30%) [TIMS] **CO2 reduction** – **Achieved with 'considerable delay'** [TIMS] Although delayed, the Konin biomass unit now operates at a 93.5% efficiency, significantly above the benchmarked 75%. Total annual emission reductions achieved in 2016 was 510 800 tonnes CO2, above the benchmarked 408,731. It is expected that annual savings will amount to at least 434,000 tonnes CO2 going forward. [TIMS]
Market expansion	**Not achieved**
The plant is going to contribute to the **market expansion through selling significant part of the certificates on the Polish Power Exchange**. This can also represent a demonstration incentive for the entrants in the renewable energy sector. The transition benchmark includes **percentage of green certificates originated**	**Sale of 35% of Green Certificates** on Polish power exchange, outside of off-take agreements **Not achieved due to market conditions** [TIMS] RES support scheme in Poland has transitioned from a Green-Certificate-based system towards a market/auction-based system offering long-term revenue certainly (feed-in-premiums), with effect from 1 July 2016.
Setting standards for business conduct and energy efficiency improvements	**Achieved**
The Project will aim to **exceed the minimum requirements and performance benchmarks that are needed for compliance with the best available technique**s, according to EU requirements including IPPC, LPC and CHP Directives and the proposed Directive on Industrial Emissions.	At least **75% nominal generation efficiency** in the co-generation mode according to EU requirement (EU directive 2004/8/EC) – **Achieved**; . The new biomass boiler, based on the fluidized circulating bed (CFB) technology, generating electricity only, achieved 93.5% efficiency, i.e. well above the guaranteed value [TIMS]

41829 EC SW – CCGT

OUTPUTS	
Expectations (BDS12-112)	**Delivery** **Not delivered by project closure**
Physical outputs • construction of a **new 449MWe / 268 MWt CCGT unit**; the first large scale Combined Cycle Gas Turbine unit (CCGT) project in Poland; The investment provides a solution for **replacement of all of the old coal-fired power units** at an existing 341MWe/366MWt power plant operated by Tauron Wytwarzanie S.A.. The Project is scheduled for completion by mid 2015	• EBRD loan fully prepaid in March 2017; at that time the Client had terminated EPC contract, due to major delays by the EPC contractor. The **project indicted completion was delayed until 2017 or 2018.** • **Monitoring of physical completion as well as environmental outcomes cased** after the project's closure.

OUTCOMES	
SEI/ GET contribution	**Not achieved**
GET reported contribution: GET Finance: €69.3m; Mitigation finance €69.3m Physical indicators **expectation (GET reported)**: • **CO2e Reduced (kton/y) 950** • Primary Energy Saved (GJ/y) 12,666,667 • Primary Energy Saved (toe/y) 301,587	• cancellation of about half of EBRD finance, **total disbursed €34m**; prepaid early in March 2017 • **CO2e Reduced (kton/y) 950 – not achieved (by the end of monitoring of the project, the CCGT had not been commissioned)**
TRANSITION IMPACT	
Expectations	**Achievements**
Demonstration effect of replicable behaviour and activities:	**Not achieved**
• The Project will **increase the level of gas fired generation in the Polish energy mix** from its current low level of approximately 4% to around 6.2%, i.e. 55% increase. This represents a significant departure on the behalf of the government with regards to reliance on coal-based generation. • **demonstration signal** to the financial market and investors that new **CCGT projects are already bankable and viable**	**By the time of TIMS monitoring closure the project had not been commissioned**. TIMS nevertheless considers the demonstration effect as partly achieved, based on other gas-fired projects having been closed in Poland in the meantime. This highlights the long-standing issues with monitoring contribution to any 'demonstration'; it is not discussed how project that was at the time not yet commissioned and was experiencing significant delays could have positively demonstrated financial stability and viability of CCGT projects. It is unlikely that there is any positive causal link between this project and the development of other such projects in the country.
Setting standards for corporate governance and business conduct	**Not achieved**
• Replacement of old coal-fired generation units with a modern gas-fired unit allows an increase of combustion cycle efficiency, as well as significantly lowers CO2 and NOx emissions. It is estimated that the Project will produce **carbon emissions reductions of at least 950,000 tonnes of CO2 per annum** • With a design gross **electricity efficiency of 59.77%** (above the EU average of approximately 57%) and specific carbon emissions of 370 kg/MWh in condensing mode and cogeneration efficiency above 80% in full cogeneration mode, it will be the top performance range in Europe	**Decommissioning** the existing Power Station III **coal-fired boilers** with the total capacity of 240MW – **Not achieved**; the decommissioning of boilers K12 and K13 was postponed by mid-2020. It was agreed that the boilers can operate max 17500h from January 2016 due to the fact that ECSW CCGT was not completed so the boilers are needed to provide heat for local community. [TIMS] **Decommissioning** the existing Power Station II **coal-fired boilers** with the total capacity of 80MW – **Not achieved;** confirmed by the client that the decommissioning will take place by end of 2018 and it is replaced with pure biomass unit of 30MW [TIMS] **Electricity efficiency** in condensing mode of 59.77% and specific carbon intensity 0.29 ton CO2/MWh – **Not achieved;** the Project has not commissioned yet so this benchmark cannot be monitored [TIMS]

44527 ENERGA smart grid

OUTPUTS		
Expectations	**Delivery**	**Delivered**
Physical outputs • Co-financing of the implementation of the Energa Distribution System Operator (DOS) **investment programme for 2012-2015 of ca. €1.3bn,** including: - the **Smart Grid Project**, including investments in the distribution network and intelligent metering system - construction of **new lines for connection of new Renewable Energy Sources** (mainly wind) - **upgrade and extension of distribution network** and construction of new residential and commercial connections	• Implementation of the investment programme, although **with certain modifications, which resulted in the overall sum reduced from PLN 5.2 billion to PLN 4.9 billion** was achieved in line with schedule [TIMS]	
OUTCOMES		
SEI/ GET contribution		
GET reported contribution: GET Finance: €96.3m; Mitigation finance €96.3m Physical indicators **expectation (GET reported)**: • **CO2e Reduced (kton/y) 130** • Primary Energy Saved (GJ/y) 2,166,580 • Primary Energy Saved (toe/y) 51,585	• **CO2** reported **achieved;** for 2015, thanks to lowering the transmission and distribution losses, the reduction of CO2 emissions amounted to ca 340 ktons [TIMS]	
TRANSTION IMPACT		
Support for expansion of the renewable energy market in Poland		**Achieved**
• The **limited capacity of the network in areas with favourable wind conditions is one of the key barriers for the development of the renewable energy** market in Poland. The Project is expected to have a positive effect on the expansion of the renewable energy market **by increasing grid connection capacity;** in the years 2012-2015, ENERGA plans to **connect ca. 434 MW of RES**	• Over the years 2013-2015 alone, **21 wind farms were connected to HV network** with a total connection capacity of over 825 MW. In addition, during this period RES with a total capacity of almost **467 MW have been connected to the MV network** [TIMS] • already in 2015 the Group generated 43% of its energy from RES (17% from hydro, 5% from biomass and 10% from wind) [TIMS]	

Demonstration of new technologies and best industry practices		**Achieved w/ delays**
• EBRD loan will help Operator to achieve the first key milestones of the Smart Grid Strategy, aiming at **100% deployment of smart meters in its area of service**, which will help Poland meet the EU requirement of 80% of country coverage by 2020. (80% coverage by 2017 and 95% coverage in 2020) • Will send a **strong demonstration signal**, that smart grid investments in the electricity distribution sector are viable investment strategy in Poland, leading to significant energy efficiency improvements;	• Decrease in total System Average Interruption Duration Index (SAIDI) from 309 minutes in 2012 to 221 in 2015YE – **Achieved w delay**: met in 2018, when total SAIDI reached 151 [TIMS] • Decrease in planned SAIDI from 84 minutes in 2012 to 59 in 2015YE – **Achieved**; planned SAIDI for 2015 was 46.4. The planned SAIDI for 2018 was 43,8 [TIMS] • Decreased in total System Average Interruption Frequency Index (SAIFI) from 3.8 in 2012 to 2.4 in 2015YE – **Achieved w delay**; The benchmark was met in 2018, when total SAIFI reached 2.15 [TIMS] • Decreased in planned SAIFI from 0.43 in 2012 to 0.28 in 2015YE – **Achieved w delay**; The benchmark was met in 2018 when planned SAIDI was 0,28 [TIMS] • The emissions related to grid energy losses of maximum 1,475 million tonnes, representing a saving of over 130,000 tonnes of CO2 emissions vs. the 1.6 million tonnes in the scenario without the Project implementation – **Achieved**; for 2015, thanks to lowering the transmission and distribution losses, the reduction of CO2 emissions amounted to ca 340 ktons [TIMS]	
Setting standards of corporate governance and business conduct		**Achieved**
• significant **improvements in the network reliability** and will prepare the distribution network to be ready for the **implementation of smart grid solutions**	• Min. investments in intelligent meters in 2012-2015 at PLN 570 million – **Achieved w delay**; investments in intelligent meters in the period of 2012-2015 amounted to PLN 427.6 million [TIMS] • Minimum share of users covered by Advanced Metering Infrastructure (AMI) system to reach 80% by 2017YE (i.e. 3 years ahead of the regulatory quotas) and exceed 90% by 2020 – **Achieved** for 2017 [TIMS] • Presentation of summary conclusions from Smart Grid Pilot Project to the Regulator and at an energy sector conference – **Achieved**; The conclusions of the UPGRID project related to Smart Grid solutions have been extensively presented on numerous conferences (both national, but also international sector conferences). The Regulator's employees have also become acquainted with the results of the programme undertaken by Energa. Additionally the information on the UPGRID project has also been included in many science publications and technical magazines [TIMS] At least one other DSO to implement intelligent metering on commercial scale – no reporting. CIPS certification to be achieved by the Company – no reporting.	

Integrated Approach to Polish Renewables

IAPR (BDS14-255; SGS14-237; SGS14-237 (Addendum 1), TCRS project #433)

45739 Darlowo Wind (BDS14-256)

46645 Radzyn Wind Farm (BDS14-329)

46962 Polenergia Wind Portfolio (BDS15-030)

47932 Banie Wind Farm (BDS15-282; BDS15-282 (Addendum 1))

48064 Grid Enhancement for Renewables (BDS17-050; BDS17-055)

OUTPUTS	
Expectations	**Delivery** **Partly achieved**
Darlowo Wind • construction, **commissioning** and operation of **a 74 MW portfolio of two wind farms**	**Darlowo** • **Not achieved**; During the final permitting five locations encountered permitting issues which **reduced the capacity from 74MW to 61.5MW**
Radzyn Wind Farm • construction and operation of Radzyn Wind Farm. The Project is a wind farm, consisting of thirteen 3.0 MW Vestas V112 wind turbines (WTG) with a total **capacity of 39 MW**;	**Radzyn Wind Farm** • **Largely achieved**; As one of the turbines did not receive a construction permit, the funds were reallocated towards the MV connection, to enable it to operate at full **capacity of 36MW** [PMM]; • implementation was completed **on time and within budget** throughout 2015 [PMM]
Polenergia • construction and operation of **100MW portfolio of three wind farms**, namely 48MW Mycielin WF, 12MW Pieklo WF and 40MW Grabowo WF	**Polenergia** • **Not achieved**; Due to the short time remaining to commission wind farms being eligible for Green Certificates, it was decided to **only construct the 48MW Mycielin** phase and keep the other two developments for participation in future support schemes. **Out of the PLN125m signed facility only PLN109m were disbursed and the remaining part cancelled in 2017** due to the **deteriorating renewable energy market conditions**. [OPA]

Banie • construction and operation **of 50MW of Banie Wind Farm – refinancing** of the construction costs • scheduled to be completed by December 2015 and therefore qualify for the green certificates support; construction completion will constitute a condition precedent for the loan utilisation • **Extension (2016) 56 MW; Phase 2 refinancing;** was originally expected to be developed under the new auction RE support system in Poland, which was to replace the existing green certificates support scheme from the 1st of January 2016. In the light of **postponement of the introduction of the new law by further 6 months it was possible for the Sponsor to accelerate the implementation of the Project Extension and complete it under the GC scheme**. Due to the tight construction timetable of Phase 2, the risk of missing a deadline to qualify for the GC scheme was not acceptable to the Bank and a commercial co-financier, Alior Bank. Therefore (similarly as in case of Phase 1 loan), the construction completion and the qualification of the Project under the existing GC scheme will constitute a condition precedent ("CP") for the utilisation of Phase 2 tranche.	**Banie** • **Phase 1 was fully commissioned (on time and on budget)** in December 2015; • **Both phases became fully operational by the end of 1H 2016** and benefit from the GC scheme. Construction completion was **on time and within budget**
OUTCOMES	
Expectations	
For **GET reported indicators** (expectations) and delivery (where data available) see **overview table below**.	
TRANSITION IMPACT	
Expectations	**Achievement**
More widespread private ownership	**Not achieved**
Darlowo • Support a **private player** in the Polish power sector • The **Sponsors' wind generation capacity in Poland is expected to grow to nearly 10% of country's installed wind capacity** (totalling 3.4GW as of 2013YE)	**Darlowo** • **Not achieved**; Invenergy and Enerco jointly owned 330MW of installed capacity in Poland, which represents **7.2% of the total installed ca 4.6GW installed (as of 2015YE**) wind capacity in Poland. Slightly lower level market share was driven by higher than expected new investments in wind energy during 2015. As of **2016YE the Sponsor's market share declined to 5.7%** as the wind capacity increased to 5.8GW. [TIMS] • **Market share of state-controlled RE production to remain below 20%** - **Not achieved**; with new regulations in 2016 Polish energy utilities have revised their strategy and focused on the potential impairment of their renewables

	portfolio rather than new investments and acquisitions of further wind capacity. This means that the sector consolidation is not expected to further increase, but to remain at a comparable level; **in 2016 RE production of PGE, Tauron, Energa and Enea amounted to 49% of the total RE production** in Poland. [TIMS]
Radzyn • support a relatively **new, independent private player** in the Polish still largely state-controlled power sector; experienced middle sized Sponsor (Green Bear) that remains committed to invest in the renewable energy sector despite the turbulent regulatory and market environment • **demonstration signal** to the market about the potential for the private sector role in the Polish energy sector	**Radzyn** • **At least 2 new private entrants** (not operating at the date of signing of the project) becoming significant players in the renewable energy sector – **Not achieved**; only one player of that size entered the market (Banie project) post Radzyn approval. However the auction volumes currently in the formal approval process, give hope that another new entrant may decide to enter in the next two years [TIMS] • **Market share** of state-controlled RE production to remain below 20% - **Not achieved**; due to the slowdown in the construction of new renewable energy sources the market share of utilities in the overall renewable energy production as per 2016 RE production of: PGE, Tauron, Energa and Enea amounted to 49% of the total RE production in Poland - this however also includes biomass cofiring which is expected to gradually decrease as well as old hydro for which there is no prospects for private ownership; [TIMS]
Expansion of competitive markets	**Achieved**
Radzyn • By **operating on a merchant basis** and selling the certificates in the market (via an electricity trader or broker), the Project would **contribute to the growth of the tradable GC market** in Poland, thus providing additional liquidity, more reliable market-based investment signals and increasing price transparency for GC	**Radzyn** • Off-take contracts for the Project to be exposed to merchant risk without the need of additional sponsor support – **Achieved**
Polenergia • **electricity output and green certificates will be sold by the Borrower to the trader at market prices** who will then place part of the output on the energy exchange depending on the market conditions • potential to **contribute to the growth of the competitive green certificates** and electricity markets in Poland	**Polenergia** • Sale of **100% of the Project's output on a merchant basis** to the trader that will then place part of the output either on the energy exchange or sell it through short and medium term contracts – **Achieved**; The total output of the project is being sold to Polenergia Obrot, a trading arm of Polenergia, on the merchant basis that then places it on the energy exchange and / or sells via short term offtakes [TIMS] • The Client **does not enter any long term PPA for sale of output or GC** other than with the trader – **Achieved** [TIMS]

Banie • **electricity output and green certificates will be sold by the Borrower to the trader (Axpo) at market prices** who will then place the output on the energy exchange; contribute to the **liquidity of the tradable green certificates market** in Poland, thus increasing price transparency of the GC scheme • supports **new private entrants becoming significant players** in the RE sector, as the Sponsor intends to construct further **86 MW of wind projects in the nearby area in the future**	**Banie** • **Sale of 100% of the Project's output on merchant basis to the trader – Partly achieved**; 100% of GC and electricity output is sold via a trader, i.e. the Company is no longer selling electricity to the off-taker of last resort [TIMS] • The Client does **not enter any long term PPA/CPA for sale of electricity output or GC** other than with the trader or under the auction scheme – **Achieved** [TIMS]	
Demonstration of replicable products/ activities		**Not achieved**
Commercial viability As in the previous period, commercial viability/ success, was the underlying source of further demonstration effects in these projects. The regulatory context was still suffering from – at this point protracted – uncertainty. While in 2014 when the IAPR was approved the investment in the sector was still relatively strong, the rationale behind the Bank's expectations of demonstration effect was focused on non-recourse financing of projects and promoting the exposure of projects to market risk. For selected financial indicators (where data available) see **overview table below**.	**Darlowo** • had a long term off-take contract with PKH, however already at the time of disbursement such **contract was disputed by the off-taker**. Therefore, the **Bank implemented a structure which envisaged a merchant basis** [OPA] • Additional guarantees were given by the Darlowo Sponsor of 10% to deleverage the project in case the project fails to secure the long term fixed offtake contract; • **Not achieved**; Due to **lower than expected green certificates prices** total revenues for 2017 amounted to PLN 36m (EUR 8m) (vs benchmark PLN 69m/EUR 16m); [TIMS] even though the benchmark was based on the original installed capacity which was scaled down, the projected revenues for 2017 were 86m PLN, vs 36m PLN achieved, almost 60% below the projection (scale down in installed capacity ca. 17%); • The **Darlowo project was restructured** in September 2017 which included **a partial prepayment** to reduce leverage using the project contingency accounts [OPA] **Radzyn** • **not secured long term offtake contract** and have taken a view on forecasted market prices; • The Bank renegotiated the 5% cost overrun guarantee to be kept in place in form of a deposit in an escrow account for the purpose of supporting project cash flows should the DSRA be not sufficient in return for a covenant waiver. **No other restructuring was necessary**, as the project structure was	

	sufficiently robust to sustain the regulatory uncertainty and lower electricity prices. • **Commercial success – Not achieved**; The **deterioration in market conditions have resulted in much weaker financial performance**. At the moment the benchmark [revenues target] is not achieved and unlikely to be achieved in short term; [TIMS] **Polenergia** • **not secured long term offtake contract** and have taken a view on forecasted market prices; • In TIMS commercial success defined by **Sponsors not needing to contribute more equity** (unlike in previous projects where this was a revenue based benchmark) – this was **achieved**. • However financial indicators revenues, EBITDA and DSCR significantly **below projections** in the first three years of operations (see below overview table). **Banie** • **not secured long term offtake contract** and have taken a view on forecasted market prices; • While the **sector developments led to worse project economics the Bank decided to cancel part of the loan commitment in the amount of PLN 113m**, resulting in a lower leverage of ca. 43%. In addition the **Sponsor agreed to provide (i) debt service support** (limited to the amount of debt utilized under the last tranche), (ii) **real estate tax cost overrun guarantee** and (iii) **reserve account** corresponding to one year potential higher tax claims; [OPA] • Project **serviced the debt with its own funds** and the financial performance of the Project is in **line with forecast revised for the purpose of OpsCom approval in June 2017 but below the original Base Case**. Given the Project's moderate leverage (41%), it is expected that no debt service support from the Sponsor will be required and that the ratios will be met [TIMS]
Demonstration effect **Darlowo** • **demonstrate the feasibility of renewables** project in Poland in the current environment • Phase III Project is largely structured on the basis on prevailing regulation and therefore it may **create an additional platform for EBRD to be involved in policy dialogue** specifically oriented to ensuring protection of the renewable energy sector from **retroactive changes**	**Darlowo** • Despite acknowledging **lack of commercial success** to date (**Not achieved**), which was supposed to form the basis of the demonstration effect, TIMS considers the demonstration **transition objective 'partially achieved' based on closings of multiple new wind farm projects** in 2015. **This approach makes little sense in practice**.

• **partial exposure to the merchant risk** (by accepting a high risk offtake contract with PKH and building in merchant offtake alternatives) incorporated in the financing structure will emphasize the Bank's confidence	
Radzyn • **demonstrate the viability of a medium-scale merchant wind power plant** financed on a limited-recourse basis in Poland by an independent power producer • operating on **fully merchant basis** which will be **financed with commercial bank participation** and one of the first wind farms in Poland using the newest 3MW turbines; **merchant nature** to demonstrate that lenders are willing to take risks of price volatility on the market. This is especially significant in the **current market conditions that are marked by regulatory uncertainties which already deterred investments in renewables projects**.	**Radzyn** • **Future closing of three wind farm project** deals under a project finance structure in Poland without IFI financing in addition to those benchmarked under previous projects – **Not achieved**; This is expected to happen under the new auction regime - ie 2 years delay [TIMS] TIMS reference to investment resuming under new regime may be correct, but there is little link with the rationale of the expected 'demonstration effect' which was targeted at attracting investment into the regulatory uncertainty **Post-TIMS monitoring** – TIMS was closed in 2018 (at TI 40 down from original ETI 60); **PMM in 2020** notes that 2 new private entrants was achieved (Banie, Potegowo), and share of 80% private sector in industry sector is also met. In late 2019/2020 there were 3 wind farm project deals closings under a project finance structure in Poland without IFI financing thanks to Akuo, Pacifico and Uriel transactions [PMM] This **post-TIMS monitoring of past-due benchmarks has little practical value for the discussion of TI** achieved: i) there is actually no discussion present; ii) the implication that benchmarks 'were achieved with delay' ignores the context and the implicit theory of change present in the original expectations/ benchmarks – the project's transition rationale was to attract investment into the wind sector in the context of regulatory uncertainty (transition period for the RE support system) and for a project operating on merchant basis; the project's commercial success was to underpin the demonstration. New investment happening in the changed regime (auctions) presents little evidence of any demonstration effect of a project not conceived in these conditions; likewise the project's regained financial strength at this point is important for lenders/ investors but past the date it could have served as a demonstration.
Polenergia • project has the potential to demo**nstrate the feasibility of renewables project in Poland in the current transition period** between the old and new RES support system and help the country meet the EU's renewable target; • **viability of a large-scale merchant wind power plant financed on a limited-recourse basis** in Poland by an independent power producer	**Polenergia** • Successful **construction completion of the three wind farms** and their qualification for the green certificates support scheme **– Not achieved**; see above in Outputs; project was scaled back to qualify for the GC; TIMS inexplicably rates as Achieved; • Market share of state-controlled RE production to remain below 20 % - **Not achieved** [TIMS] • **Closing of another two wind** farm financings without IFIs involvement for merchant projects qualifying for the green certificates support scheme – **Achieved**; Closing of another two wind farm financings without IFIs

	involvement for merchant projects qualifying for the green certificates support scheme [TIMS] Contribution unclear.	
Banie • demonstrate the viab**ility of a medium scale merchant wind power plant financed on a limited-recourse basis** in Poland by an independent power producer. The Project will be one of the few wind farms in Poland to be **fully merchant based** (the output will be sold via the trader at the market price) and having **no min. price or debt service support from the sponsor**	**Banie** • **Market share of state controlled RE production to remain below 20%. - Not Achieved**; After the anti-renewables regulations entered into force in 2016, the Polish energy utilities have revised their strategy and focused on the potential impairment of their renewables portfolio rather than new investments and acquisitions of further wind capacity. This means that the sector consolidation is not expected to further increase, but to remain at a comparable level as there are few large scale private projects that could diversify away from utilities dominance. According to the recent data, in 2017 RE installed capacity of: PGE (2,181MW), Tauron (344MW), Energa (590MW) and Enea (443MW) amounted to 39% of the total RE installed capacity in Poland (8,538MW). [TIMS] • **Closing of financing for other two wind farms based on limited recourse basis without IFI involvement – Not Achieved**; Due to the regulatory uncertainty that continued during 2016-2017 and implementation of new adverse regulations for renewable sector, **Banie Project was the sole and the last wind farm financed in Poland in 2016.** As the regulatory situation becomes clearer, such large projects are expected to return to the market, but the timing remains uncertain. However, the auction volumes currently in the formal approval process, give hope that another new entrant may decide to enter in the next two years. [TIMS]	
Setting standards for corporate governance and business conduct		**Largely achieved but unclear connection to setting standards**
Darlowo • effectively save approx. **140,000 tonnes CO2 per annum**. • the Borrowers will require an enhanced corporate governance structure. This involves a **creation of a local operating and maintenance subsidiary**, which thanks to the successful know-how transfer from both Invenergy and GE, will become an independent O&M contractor for the entire DEC portfolio and for the future projects	**Darlowo** • **CO2 savings Not achieved** due to scale back in installed capacity • Incorporation of operating and maintenance subsidiary - **Achieved**	
Radzyn • save approx. **82,500 tonnes CO2 per annum**.	**Radzyn** • **Achieved**; [OPA]	
Polenergia • effectively save approx. **171,000 tonnes CO2 per annum**	**Polenergia** • **Not achieved**, due to substantial scale back of installed capacity	

Banie • effectively save approx. **90,000 tonnes CO2 per annum** • **extension:** Project **will effectively save approx. 197,000 tonnes CO2 per annum** (consisting of 90,000 tonnes CO2 saving from Phase 1 and 97,000 tonnes CO2 saving from Phase 2 based on P90 energy yield scenario). [*EvD: does not actually add up*]	**Banie** • **Achieved** [OPA TIMS]

*Table 8: Selected **financial indicators** for IAPR wind farms, **projected vs actual***

Darlowo Wind /P90

	Revenue PLNm			EBITDA			DSCR		
	Projected	Actual	*Diff*	Projected	Actual	*Diff*	Projected	Actual	*Diff*
2015	65	27	*-58%*	55	15	*-73%*	1.6x	n/a	*n/a*
2016	85	28	*-67%*	73	-19	*-126%*	1.5x	1.0x	*-36%*
2017	86	36	*-58%*	74	16	*-78%*	1.5x	0.8x	*-47%*
2018	87	56	*-36%*	75	41	*-45%*	1.5x	1.9x	*27%*

Radzyn Wind Farm /P75

	Revenue PLNm			EBITDA			DSCR		
	Projected	Actual	*Diff*	Projected	Actual	*Diff*	Projected	Actual	*Diff*
2015	-	10	*n/a*	-	-3	*n/a*	n/a	n/a	*n/a*
2016	44	22	*-50%*	36	13	*-64%*	1.8x	0.5x	*-72%*
2017	44	27	*-39%*	36	16	*-56%*	1.6x	0.9x	*-43%*
2018	46	37	*-20%*	37	30	*-19%*	1.6x	1.4x	*-15%*

Polenergia Wind Portfolio /P75

	Revenue PLNm			EBITDA			DSCR		
	Projected	Actual	*Diff*	Projected	Actual	*Diff*	Projected	Actual	*Diff*
2016	81	33	*-59%*	66	-9	*-114%*	4.9x	n/a	*n/a*
2017	125	29	*-77%*	101	15	*-85%*	1.7x	0.7x	*-59%*
2018	139	40	*-71%*	115	63	*-45%*	1.9x	1.3x	*-32%*

Banie Wind Farm /P75

	Revenue PLNm			EBITDA			DSCR		
	Projected	Actual	*Diff*	Projected	Actual	*Diff*	Projected	Actual	*Diff*
2016	72	46	*-36%*	59	35	*-41%*	1.5x	0.9x	*-40%*
2017	103	78	*-24%*	85	57	*-33%*	1.7x	2.2x	*29%*
2018	112	100	*-11%*	92	74	*-20%*	1.7x	2.1x	*24%*

Note: Some actual DSCRs are above forecasted despite lower revenues and EBITDA. This is due to lower debt service compared to approval following either restructuring of the projects or lower debt disbursements
Source of data: OPS19-865: Operation Performance Assessment Pawlowo Wind Farm, Orla Wind Farm, PEPSA Wind Portfolio, Darlowo Wind, Radzyn Wind Farm, Polenergia Wind Portfolio, Banie Wind Farm

Table 9: Overview of GET reported parameters for IAPR wind farms, and projected vs actual capacity, generation and CO2 savings

Darlowo Wind /P90

GET reporting		Installed capacity MW				Generation GWh			CO2 savings kton			
GET finance €m	**41.17**		Projected	Actual	*Difference*	Projected	Actual	*Difference*	Projected	Revised*	Actual	*Difference*
CO2e Reduced (kton/y)	**140**	2015	74	62	*-16%*	144	92	*-36%*	-	125	74	*-41%*
Primary Energy Saved (GJ/y)	2,000,000	2016	74	62	*-16%*	186	164	*-12%*	140	173	131	*-24%*
Primary Energy Saved (toe/y)	47,733	2017	74	62	*-16%*	186	195	*5%*	140	173	156	*-10%*
RE Electricity Produced (MWh/y)	180,000	2018	74	62	*-16%*	186	155	*-17%*	140	173	124	*-28%*
RE Capacity Installed (MW)	**74**											

Radzyn Wind Farm /P75

GET reporting		Installed capacity MW				Generation GWh			CO2 savings kton			
GET finance €m	**23.33**		Projected	Actual	*Difference*	Projected	Actual	*Difference*	Projected	Revised*	Actual	*Difference*
CO2e Reduced (kton/y)	**83**	2015	39	36	*-8%*	-	42	*n/a*	-	-	34	*n/a*
Primary Energy Saved (GJ/y)	1,100,000	2016	39	36	*-8%*	113	119	*5%*	83	90	95	*6%*

Primary Energy Saved (toe/y)	26,253	2017	39	36	*-8%*	113	135	*19%*	83	90	108	*20%*
RE Electricity Produced (MWh/y)	102,000	2018	39	36	*-8%*	116	116	*0%*	83	93	93	*0%*
RE Capacity Installed (MW)	**39**											

Polenergia Wind Porfolio /P75

GET reporting		**Installed capacity MW**				**Generation GWh**			**CO2 savings kton**			
GET finance €m	**29.16**		Projected	Actual	*Difference*	Projected	Actual	*Difference*	Projected	Revised*	Actual	*Difference*
CO2e Reduced (kton/y)	**171**	2016	100	48	*-52%*	210	139	*-34%*	171	168	111	*-34%*
Primary Energy Saved (GJ/y)	2,600,000	2017	100	48	*-52%*	289	148	*-49%*	171	231	118	*-34%*
Primary Energy Saved (toe/y)	61,905	2018	100	48	*-52%*	289	148	*-49%*	171	231	118	*-34%*
RE Electricity Produced (MWh/y)	289,000											
RE Capacity Installed (MW)	**100**											

Banie Wind Farm /P75

GET reporting		**Installed capacity MW**				**Generation GWh**			**CO2 savings kton**			
GET finance €m	**71.61**		Projected	Actual	*Difference*	Projected	Actual	*Difference*	Projected	Revised*	Actual	*Difference*
CO2e Reduced (kton/y)	**98**	2016	106	106	*0%*	236	229	*-3%*	187	189	183	*-3%*
RE Electricity Produced (MWh/y)	154,000	2017	106	106	*0%*	317	363	*15%*	187	254	290	*14%*
RE Capacity Installed (MW)	**50**	2018	106	106	*0%*	320	311	*-3%*	187	255	248	*-3%*

**) Revised CO2 savings: 'Projected' savings are as reported in the Board document. 'Revised' savings are the CO2 saving projections according to the current methodology using expected P75 generation and a grid factor for Poland of 0.799 tons of CO2 / MWh. [OPA]*
Source of data: GET reporting: GET database; Installed capacity, Generation, CO2 savings: OPS19-865: Operation Performance Assessment Pawlowo Wind Farm, Orla Wind Farm, PEPSA Wind Portfolio, Darlowo Wind, Radzyn Wind Farm, Polenergia Wind Portfolio, Banie Wind Farm

48064 Grid Enhancement for Renewables

OUTPUTS		
Expectations	**Delivery**	**Delivered**
Physical outputs • Within the overall PLN 6.5 billion (EUR 1.5 billion) network investments of PGE DSO for years 2016-2019, the Bank has identified **PLN 1.73 billion (EUR 401 million) worth of investments**, which aim to (i) **increase the connection capacity of new renewable energy sources**, (ii) improve the **grid assets and management systems** related to necessity to control dispersed generation and (iii) **reduce energy losses** (the "Project"). EBRD Loan proceeds will finance up to one third of the total Project cost. - Investments in substations (approx. 31) amounting to PLN 270 million - Automation of the grid amounting to PLN 181 million - Investments in new electricity lines amounting to PLN 476 million - Investments in modernisation and replacement amounting to PLN 797 million • Refinancing not exceeding 20%of the loan amount	• As of the end of 2019 there has been a **35% increase of the overall Project plan** (based on completed contracts), which is attributable to the results of tender outcomes. The overall level of **EBRD financing is not impacted by these changes. The EBRD loan was fully disbursed in April 2019** (PLN 500 million, ca EUR 116 equivalent). [PMM] • The **final costs** of the agreed investment categories are outlined below: [PMM] - Investments in substations amounting to PLN 214.7 million - Automation of the grid amounting to PLN 219.2 million - Investments in new electricity lines amounting to PLN 703.3 million - Investments in modernisation and replacement amounting to PLN 1,200.4 million. • The investment programme has been in **over 99% completed in 2019**, with only one contract (value PLN 10m / ca EUR 2m) completed 89% as at the end of 2019 and with **full finalisation expected in 2020 [**PMM]	
OUTCOMES		
SEI/ GET contribution		
GET reported contribution: GET Finance: €119.8m; Mitigation finance €119.8m Physical indicators **expectation (GET reported)**: • **CO2e Reduced (kton/y) 70** • Primary Energy Saved (GJ/y) 359,824 • Primary Energy Saved (toe/y) 8,567	• **No reporting available**	
TRANSTION IMPACT		
Expansion of market		**Not achieved**
• **limited capacity of the network in terms of connecting new renewable** energy projects is one of the key barriers for the development of the renewable energy market in Poland; positive effect on the **expansion of the renewable energy market by increasing grid connection capacity;**	• At least 500 MWs of newly connected RE sources to the PGE DSO network (including 400MW from IPPs). – **no reporting**	

• PGE is expected to strengthen its network, so that the annual connection capacity of its grid remains above 1.5GW. It is expected that PGE will **connect minimum 500 MW of RE investments** (over 30% increase vs the current level of 1.4GW of connected capacity**) by 2019**. It is expected that a vast majority of these projects (representing min. 400MW) will be owned by **independent power producers** (IPPs).	• As a result of negative regulatory developments**, the envisaged increase in private sector participation and IPPs, and the associated build-out and connection of renewable energy assets, have not been achieved** [TIMS] **TIMS closed reporting in 2018, before benchmarks were due to be delivered, and before physical implementation of investment plan was finalised**. It noted that 'no significant further developments are expected', and downgraded project to TI 40 for closure; this still meant 'Satisfactory' achievement of TI, which was explained by TIMS as '*Taking into account the progress made primarily on RE capacity build-out, network connections, national CO2 savings and acknowledging the significant efforts of the Banking team on policy dialogue for sector turn-around* – given the rationale of the original TI expectations of the project, this **appears largely over-rated and not justified**.	
Setting standards for business conduct		**No reporting**
• upgrading PGE's distribution network will **improve grid reliability** and would lead to decreasing energy losses; losses at its network will be **reduced from the current level of around 5.9% down to 5.6%.** • includes roll-out of **automation technology** for the electricity grid, which in the future would facilitate the implementation of demand side management, and help to optimise distribution network operation. • allow saving **approximately 70k tonnes of CO2 emissions per annum**.	• Reduction of operational losses in PGE's distribution grid from 5.9% in 2016 below 5.64% in 2020, leading to over 70k tonnes of emission reduction per annum **– No reporting** • Improvement in SAIDI by approx. 180 minutes (from 412 in 2016) **– No reporting** • At least PLN 150 million investments to be spent on grid automation programme (remotely controlled switchers and meters) **– No reporting** • CO2 savings – **No reporting**	
Demonstration of new technologies and processes		**Not achieved**
• PGE is expected to become the Bank's **partner in the implementation of the electricity storage related technical cooperation task that is part of the grid management TC envisaged** under the Integrated Approach; two initiatives: - PGE DSO plans to strengthen its **research agenda** aimed inter alia at issues related to (i) dispersed renewable energy generation, (ii) network imbalances and (iii) integration of smart grid solutions. In this respect PGE DSO is about to initiate works on the electricity distribution research centre – the first such investment in Poland; - PGE DSO would work on the **innovative real life on-grid implantation of an electricity storage unit**, which could be connected to the low voltage distribution network. This innovative application could help to counterbalance the imbalances in the low voltage network.	• As a result of regulatory developments, the **policy dialogue (TC) assignments were largely not carried out as originally envisaged in the design of the IA**. The regulatory uncertainty, slow-down in RE investment, and difficulties in achieving commercial success and attracting private investors in the Polish RE sector had a **significant negative impact on the achievement of the transition impact benchmarks of the IA**. [TIMS]	

IAPR SUMMARY	
Overall approach	
I – promoting private sector investment in the Polish renewable energy sector; **II – supporting network operators in building both the physical and operational capacity** to accept and manage large scale penetration of renewable energy, including addressing issues of grid access and capacity **III – support the regulator in the design of the revised RESS by contributing to the know-how transfer**	
OUTPUTS	
Expectations	**Delivery** — **Physical outputs – Largely not delivered;** **TC – Largely not delivered;** **Policy Dialogue – Delivered.**

Physical outputs

- **(I) Invest in new renewable energy capacity** in the period 4Q2014-18. The current pipeline indicates that this could be in the order of **EUR 400 million leading to 500 MW of new capacity**, subject to an acceptable regulatory regime;
- **(II)** Invest at **least EUR 150 million leading to support strengthening of the electricity grid** to facilitate the connection of new RE sources over the period 4Q2014-18;

Technical cooperation

- *The Regulatory TC for assistance to ERO was re-scoped in 2016:* **(III) assist the regulator, i.e. ERO, in smooth implementation** of the new revised RESS, so that **achieving** the national and EU targets for RE remains on track; two TC assignments:
  - (i) **preparation of interpretations for the new law** taking into account its transparency from the investors' perspective;
  - (ii) the **assistance in fine-tuning of the auction process** and the pilot auction implementation.
- **(III) ERO Capacity building**: facilitate **know-how transfer** between ERO and their western counterparts
- **(II) assist grid operators (distribution system operators - DSOs) to encourage the uptake of international best practice.** This would also include the necessary support related to the introduction of the demand side management solutions and would facilitate application of the best solutions in electricity grid management.

Physical outputs

- **Investment volume and installed capacity – Largely not delivered**
  - Four wind farms under the IAPR (Darlowo, Radzyn, Polenergie, Banie) – total EBRD **NCBI €136m; total installed capacity 252MW;** see above
  - Strengthening **electricity grid – EBRD investment €117m;** see above

Technical cooperation

There was a **TC project (ID #433)** underpinning the IAPR, which had four TC assignments approved by TC COM, with total budget of €375k (€250k allocated from donor funds).

ID	Assignment Title	Assignment Type	Committee approved assignment amount (€)	Disbursement Amount (€)
1331	Support to build capacity of the electricity regulator under Integrated	Capacity building	125,000	n/a

- **identify the remaining technical challenges** related to the need for strengthen, redesign and adoption of new management solutions for the electricity grid to connect renewable generators

Policy Dialogue

- Continued **policy dialogue to communicate the importance of a market-based RESS and the compliance with EU guidance** on the internal energy market:
  - (i) promoting an **appropriate investment climate** that provides the most efficient investment in renewable generation,
  - (ii) outlining the **necessity for a prompt implementation of the future, stable market-based regulatory framework**, and
  - (iii) ensuring a **level playing field** between domestic and foreign, as well as private and public, investors **in case the auction system materialises.**

	Approach to Polish Renewables			
	Assignment 1331 was later changed into assignments 28965 & 28966:			
28965	*Regulatory TC: Interpretation and Transparency*	*Policy dialogue*	*65,000*	*65,000*
28966	*Regulatory TC: Regulatory Best Practice*	*Capacity building*	*60,000*	*No disbursement*
1332	Support to build capacity of distribution system operators (DSOs) under Integrated Approach to Polish Renewables	Capacity building	250,000 *(based on 50% cost-sharing; 125,000 from donor funds*)	No disbursement
			375,000 (*250,000 from donor funds*)	65,000

Only one TC assignment was actually implemented.

Regulatory TC: Interpretation and Transparency:

[TCRS] The Transparency Assignment was implemented between 2Q2016 and 1Q2017. The **consultant prepared a set of interpretations for the new law**, including a summary report. This has helped to increase the transparency of the new support mechanism to the prospective auction participants.

The timing of the TC enabled the consultant to provide legal interpretations of the new regulations ahead of the pilot auction in December 2016. This helped to ensure proper communication to auction participants (including publication of legal interpretations and explanation sessions **organised** by ERO). ERO confirmed the TC assistance was very helpful in the process of auction implementation**. [TCRS]**

Policy Dialogue

Intensified in 2016 and after; see below for achievements.

OUTCOMES	
Expectations	**Achievement** **Not achieved**
Achieve **annual emissions reductions of at least 1.0 million tCO2 for Bank funded projects**	• **Approx. half was delivered** on the four wind farms financed under the IAPR
TRANSITION IMPACT	
Expectations	**Achievement**
Private sector participation	**Some achieved**
• promote private sector investment in the Polish renewable energy sector which is becoming increasingly state controlled; pursued through **supporting market based elements in the subprojects**. • addressing of the remaining bottlenecks for the development of private renewables projects including issues regarding **grid access and capacity;** EBRD has prioritised this issue of preparing the network to connect further renewable energy capacity **through its two loans to Energa**, which is currently being restructured to allow for additional grid strengthening financed exclusively by commercial co-lenders and is in discussions with other distribution companies to incentivise such discussions	• Total installed wind capacity in Poland increasing to 5.5 GW (from 3.4 GW) including **private wind capacity of at least 4 GW** (from 2.6 GW). – **Achieved**; As of 30 June 2017 the total installed wind capacity amounted to 5.8GW, of which close to 1GW is owned by the four largest utilities. Thus, the share of IPPs has been exceeded [TIMS] • At least **4 new private entrants** becoming significant players in the renewable energy sector (i.e. exceeding 50MW of operational capacity) - **Not Achieved but expected to with delay** [TIMS] • **All four distribution companies to connect in total at least 1.5GW of new renewable** capacity (majority from IPPs) – **Achieved**; **exceeded** [TIMS]
Transfer of skills and capacity building	**Largely not achieved**
• The Polish grid operators still lack experience in managing electricity generated by RE sources. This IAPR through a TC engagement will facilitate an **exchange between the Polish grid operators and their more experienced counterparts in Western Europe** to help the Polish operators apply the best solutions in electricity grid management to accommodate increased renewable energy capacity • **consultant to analyse and provide recommendation on measures to resolve the current bottlenecks and technical problems with connection of renewable generation** to the grid.	**Delivery of report on international best practices on auction design** – **Amended** benchmark to **Increase the transparency and clarity of the new auction system**; **Partially delivered** (one TC, see above in Outputs) **Best practice:** In 2018 EBRD and the Energy Community Secretariat (EnCS) have issued joint **Policy Guidelines** to help countries design and implement competitive selection processes for supporting renewable energy. [TIMS] However, **expected Regulatory TC for Best Practice was not implemented** **Not achieved** (TC not implemented): - Facilitation of information/staff exchange with Western European regulator to address knowledge gaps at ERO - At least 1 workshops with energy trading exchanges and ACER on the implications of market coupling for renewable generation

	- Review of cost allocation issues for connection charges; gap analysis of energy balancing issues; and recommendations for alignment with best practice - At least 2 of exchanges organised between the Polish grid operator and their Western European counterparts - Polish distribution grid to be fully compliant with EU best practice in facilitating renewable generation grid and market integration - Continued dialogue on the importance of the EU guidance on internal energy market and market-based RESS
Demonstration of replicable products	**Not achieved**
• demonstrate the **feasibility of renewables project in Poland in the current environment** and help the country meet the EU's renewable target (15% share of renewables in energy consumption by 2020) and the national green energy target of 20% by 2020	**Demonstration effects 'in the current environment' (i.e. at IAPR initiation 2014) not clear or substantiated; EBRD itself withdrew from investment in 2016.** Annual savings of minimum 1 million tonnes CO2 for Bank funded projects **- Not achieved** (see above) Annual savings of minimum 2 million tonnes CO2 as result of increased renewable generation in Poland – **Achieved but contribution unclear; own contribution below target** Share of **renewable energy generation** in Polish energy production to increase from approximately **10% in 2012-2013 up to minimum 17% in 2019** – **Not achieved [TIMS]**
Regulatory environment	**Some achieved**
• Continued **policy dialogue** to communicate the **importance of a market-based RESS** and the **compliance with EU guidance** on the internal energy market	This element of the IAPR expectations was **not covered by Transition monitoring**, so it was not operationalised through any benchmarks. In general, reporting on the implementation of Policy dialogue has been minimal. When the IAPR was approved (2014) there was yet not clarity about the type of the new RESS to be implemented. The expectation was for policy dialogue to support the TC assignments (above) in promoting market-based RESS. However, the decision on the auction system was made by the government shortly after, rendering some of the planned TC objectives irrelevant (these were re-scoped). Policy dialogue objectives likewise were dramatically changed in the light of the adverse regulatory changes in 2016. Policy dialogue is reported to have been intensified and **contributed to the reversal of the most damaging retroactive change, the real estate tax on wind farms in 2018**.

Post-IAPR (approved by end 2019)

50200 Potegowo Wind

51031 Szymankowo Windfarm

OUTPUTS		
Expectations	**Delivery**	**Too early to assess**
Potegowo • construction and operation of a **220MW wind farm**; • In November 2018 the Project secured a tariff of PLN 184.95 (EUR 43)/MWh for Potegowo East and PLN (EUR 45) 194.95/MWh for Potegowo West. Importantly, the investors in **the Project chose to hold back up approximately 30% of P90 energy production from Auction RESS**, trusting that they will make higher returns via selling such volumes in the general market.	**Potegowo** • The construction of the Project have been finalised, all turbines assembled, energised and commissioned in July 2020 for Potegowo East and September 2020 for Potegowo West., all but one final permit for use have been received. The client is awaiting the generation licence for Potegowo Project, which is **expected in November 2020**. LTA confirms in his last construction monitoring report (July 2020) that the completion of the Project no later than the Scheduled Completion Date - 31 November 2020 remains realistic and achievable. Similarly, the Project is expected to be **completed within budget**. [PMM]	
Szymankowo • construction and operation of a **38MW wind farm**	**Szymankowo** • construction launched [PMM]	
OUTCOMES		
Expectations		**Too early to assess**
Potegowo **GET reported contribution:** GET Finance: €49.1m; Mitigation finance €49.1m Physical indicators **expectation (GET reported)**: • **CO2e Reduced (kton/y) 471** • Primary Energy Saved (GJ/y) 2,178,616 • Primary Energy Saved (toe/y) 51,872 • RE Electricity Produced (MWh/y) 604,600 • **RE Capacity Installed (MW) 220**		
Szymankowo **GET reported contribution:**		

GET Finance: €9.9m; Mitigation finance €9.9m Physical indicators **expectation (GET reported)**: • **CO2e Reduced (kton/y) 84.9** • Primary Energy Saved (GJ/y) 392,771 • Primary Energy Saved (toe/y) 9,352 • RE Electricity Produced (MWh/y) 109,000 • **RE Capacity Installed (MW) 38**		
TRANSITION IMPACT		
Expectations	**Achievement**	
Green		**Too early to assess**
Potegowo *100% GET rated via GET direct track methodology with TI uplifts for 'scale, innovation and policy dialogue'* • **219.5 MW renewable energy capacity** • **generate 571,000 MWh** annually • **471,000 tonnes of CO2 savings** per annum • **Legal, institutional or regulatory** frameworks in target areas improved – During project life, **no changes made to the Polish tax regime** that have a meaningful, adverse and disproportionate impact on the renewable energy sector. • At least **30% of the project's generation volume sold on a merchant basis** i.e. through short-term (i.e. 1 or 2 year) contracts or on a power exchange.		
Szymankowo • **38 MW renewable energy capacity** • **generate 108,411 MWh** annually • **85,000 tonnes of CO2 savings** per annum		

Annex 3. Strategic priorities

COUNTRY STRATEGY

POLAND COUNTRY STRATEGY & COUNTRY STRATEGY UPDATES/ CSDRs		
	Context/ challenges (Energy)	**Priorities/ bank activity (Energy)**
2010-2013	**BDS/PO/10-1 (Final)**	
	Assessment of T challenges: <u>Power</u>: Market structure: Medium; Market institutions: Negligible • Key challenges: **Restructuring of large power companies** and privatisation, as well as **development of private energy efficiency and renewable energy projects**. • **Market structure** has significantly changed in recent years. In 2006 the Polish Government supported the **reconsolidation** of the sector, which had previously been fully unbundled. As a result, **state-owned generation and distribution companies were vertically** integrated to form four state-owned energy groups. • Since 2007 the electricity **market has been fully liberalised;** the **quality of institutions has also been improved**: a fully independent regulator is in place and tariffs are cost-reflective. • The **regulatory framework for renewables has become one of the most advanced** among EBRD COOs. <u>Sustainable energy</u>: Market structure: Medium; Market institutions: Small • Framework generally in place **but grid access remains a problem** • An adequate **legal and institutional framework for sustainable energy** is in place; • To support renewables, Poland has introduced **quota obligations on distribution companies**, which must be filed with tradeable certificates of origin. Certificate prices provide substantial additional cash flow to renewable project owners. .	Strategic orientations • Promote investments in **further diversification of energy and fuel supplies** to contribute to energy security, and in the sustainable development of the energy sector by **prioritising renewable energy production** and efficient use of energy. The Bank will in particular address the demand side by reducing waste of energy, thereby reducing greenhouse emissions and delivering and important contribution to combat climate change. Operational response • Participate in the **financing of nationally important projects in the energy sector** (contributing to energy security, replacement of obsolete energy production capacities, achieving BAT standards, reduction of energy intensity and diversification) together with other IFIs and, if available, with commercial • Continued **support for renewable energy and emissions reduction** towards meeting EU emission and environmental objectives, also through co-financing alongside commercial banks and other IFIs. • Support **privatisation in the energy and oil and coal sectors** and promote gas market development, commercial gas storage and gas distribution development with a particular focus on growing competition in these areas.
CSU 2012	**BDS12-081 (Final)**	
	Poland would be **expected to graduate during the CRR4** period, taking into consideration its specific circumstances and remaining transition challenges The government is on track to meet reasonably ambitious privatisation targets. In the power sector the government's **resolve to stimulate competition and unbundling in the sector has been somewhat more erratic**. Strategic priorities	Priorities for coming year • Promoting investments in further **diversification of energy and fuel supplies** and energy security with **particular focus on gas**. • Supporting **market liberalisation** through investments in extension and modernisation of the gas and energy **transmission and distribution networks**. • Supporting **sustainable energy investments in renewable energy and energy efficiency**, helping Poland to meet its EU targets.

	• Promoting investments in further **diversification of energy and fuel supplies** and energy security • Supporting sust**ainable energy investments in renewable energy** and energy efficiency (in energy, industry, public transport etc.) helping Poland to meet its EU targets T challenges Address Poland's substantial investment needs in the sector in the light of obsolete energy generation assets and the need to meet EU targets for energy efficiency and renewable energy, and environmental compliance Operations • The Bank signed **two projects supporting the development of renewable energy** and co-financed with commercial banks: a **biomass project** for a private company, allowing the conversion of its old lignite fired energy generation plant into a biomass facility, as well as a w**ind farm structured as a project finance loa**n, demonstrating the financial viability of private investment in the renewable energy sector, even in challenging market conditions and with an uncertain regulatory environment. Policy Dialogue • The Bank was in **dialogue with the Polish Ministry of Economy on a new bill amending the renewable energy support** framework which could slow down development of new projects. The Bank also continued discussions with the Polish government and reinforced its **commitment to supporting further privatisation in the energy sector**	Policy dialogue *n/a*
CSU 2013	**BDS13-071 (Final)**	
	A **government strategy** for power sector envisages **further unbundling and greater competition**, though this remains to be fully implemented. Strategic priorities • Promoting investments in further **diversification of energy and fuel supplies** and energy security • Supporting sust**ainable energy investments in renewable energy** and energy efficiency (in energy, industry, public transport etc.) helping Poland to meet its EU targets T challenges Address Poland's substantial investment needs in the sector in the light of obsolete energy generation assets and the need to meet EU targets for renewable energy, energy efficiency and environmental compliance. Operations • In the environment of **enhanced uncertainty** due to on-going discussion on the future shape of the renewable energy support framework, the Bank signed **the only project finance deal**	Priorities for coming year • In the energy sector, the focus will be on **supporting sustainable energy investments in renewable energy and energy efficiency**, helping Poland to meet its EU targets, promoting energy security and further diversification of fuel supplies, contributing to country decarbonisation. Where appropriate, the Bank will **support energy and gas market liberalisation** through investments in extension and modernisation of the **gas and energy transmission and distribution networks.** Policy dialogue • In the energy sector the Bank will **continue its policy dialogue in relation to the future shape of the renewable energy framework**, to facilitate further investments in this sector. In addition, the Bank will explore with the relevant authorities possible **improvements in the regulatory regime for energy infrastructure** to motivate new investments in particular in **cross border connections and smart grid solutions**.

	supporting the construction of Kukinia wind farm. • In addition, the Bank signed an agreement with Elektorcieplownia Stalowa Wola S.A. for the **construction and operation of the first large gas-fired energy block enhancing de-carbonisation process** in Poland. The project addressed Poland's needs of decommissioning of outdated power generation capacity and the need to meet EU targets for energy efficiency targets and environmental compliance. Policy Dialogue • The Bank was in **dialogue with the Polish Ministry of Economy on a new bill amending the renewable energy support framework**, the lack of which already negatively impacted the development of new projects. The Bank also continued discussions with the Polish government and reinforced its commitment to supporting **further privatisation in the energy sector**.	
CSU 2014	**BDS14-108 (Final)**	
	In the power sector the **government's resolve to stimulate competition and unbundling has been erratic**. The restructuring and **privatisation of power companies remains a stated objective,** and the Treasury launched an initial offering of one of the firms, Energa, on the Warsaw Stock Exchange late last year. The sector will **require substantial investment** in the coming years, including to meet EU climate change objectives. Cross-border energy infrastructure remains underdeveloped. The new Country Strategy for Poland was adopted in December 2013. Reaffirming the principle of graduation and consistent with the Medium-Term Directions for the Bank, the Bank considers that the **main instrument for decision-making on graduation will be the respective country strategies.** Strategic priorities • Promoting investments in further **diversification of energy and fuel supplies** and energy security • Supporting sust**ainable energy investments in renewable energy** and energy efficiency (in energy, industry, public transport etc.) helping Poland to meet its EU targets T challenges Address Poland's substantial investment needs in the sector in the light of obsolete energy generation assets and the need to meet EU targets for renewable energy, energy efficiency and environmental compliance. Operations • With **three milestone transactions** signed in 2013, the energy sector remained a key area of the Bank's activity in Poland. • In the environment of **enhanced uncertainty** due to on-going discussion on the future shape	Priorities for coming year • **Promoting the low carbon economy**. Coal still accounts for more than 80 per cent of Poland's primary energy supply and the economy remains among the least energy efficient in the EU. Promoting **low carbon solutions, energy efficiency and reduction of green-house gas** (GHG) emissions will therefore remain a key strategic priority for the Bank's operations over the coming years. The Bank will continue to support **diversification of energy and fuel supplies (especially in renewable energy**) and improving **energy efficiency** (both on the demand and supply side), together leading toward a more **sustainable energy market** in the country. Policy Dialogue • Promoting low carbon economy: The Bank will **continue its policy dialogue with the Ministry of Economy** and other stakeholders, promoting **transparency and clarity of the renewable energy support system**. The Bank will support the development of more **market-based financing schemes for investments in renewables**, subject to the presence of a stable regulatory framework and commercial co-financing. EBRD may also consider involvement by working with the Polish Ministry of Environment and the energy regulator ("URE") in the regulatory shift towards promoting an 'energy efficiency' framework (e.g., in distribution tariffs), and will continue its dialogue with the regulator on gas market liberalisation.

	of the renewable energy support framework, the Bank signed (effectively as a sole lender) the financing for **two renewable projects - PEP Wind and Pawlowo Wind** (with EDPR Wind as a sponsor). • In addition, the Bank has signed an important financing for **smart grid investments** supporting supply side energy efficiency solutions pursued by the energy distribution company Energa S.A.	
2013-2017	**BDS/PO/13-1 (Final)**	
	Previous CS implementation The Bank completed **nine transactions** totalling EUR 697 million leading to a CO2 emission reduction of approximately 2.8 million tonnes per year, including three projects in the renewables sector and one in a new gas-fired power plant (Stalowa Wola CCGT). Another important project in the energy sector helped to address bottlenecks in energy distribution accompanied by promoting **smart grid solutions** as well as significant CO2 reductions (Energa smart grid project). Policy Dialogue: The Bank's support and policy dialogue in this area were critical in light of regulatory uncertainties (mainly in renewable energy, where the legal works is still on-going) and the reluctance of commercial banks to finance such projects. Assessment of T challenges: Power: Market structure: Medium; Market institutions: Negligible • Key challenges: (i) increase **private sector participation in generation** and retail energy supply; (ii) increase **cross border energy trading and regional integration**; and (iii) **remove end user price regulation**. • To date, three out of four vertically integrated groups in the Polish power sector have been listed, including two that still remain majority state-owned, and one that was privatised in 2010; the Polish **power sector is still largely state-controlled**. Sustainable energy: Market structure: Medium; Market institutions: Small • Key challenges: (i) **remove barriers to grid access** for new renewable energy producers; (ii) restructure **distortionary** energy efficiency and **renewable energy subsidies** in order to encourage faster implementation of commercially viable investments; (iii) enable **credible green investment schemes** • The legal and institutional framework for sustainable energy is established but currently **faces considerable policy uncertainty** and energy intensity and renewables' penetration are lagging well behind the EU averages;	Strategic orientations • **Promoting the low carbon economy**. Coal still accounts for more than 80 per cent of Poland's primary energy supply and the economy remains among the least energy efficient in the EU. **Promoting low carbon solutions, energy efficiency and reduction of GHG emissions**, thus combatting climate change, will therefore remain a key strategic priority for the Bank's operations over the coming years. The Bank will continue financing projects leading towards **diversification of energy and fuel supplies, especially renewable energy, and improve energy efficiency** on both the demand and supply sides. Operational response • The Bank will seek to **finance projects aimed at reducing GHG emission and energy intensity**. This may include renewable energy projects, gas-fired power generation, and support for best available techniques and environmental investments helping to meet the EU Industrial Emissions Directive. Such projects will have demonstration effects and contribute to bringing new investors into the renewable business (especially when the regulatory regime remains uncertain) as well as improving access to the grid. Such investments may also be associated with the development of carbon markets in the country. • The Bank will aim to **support private operators of energy infrastructure, for projects leading to the creation of open and competitive markets in energy**, with liberalised energy and gas tariffs and third party access, facilitating the entry of new private players and the better integration of Polish gas and **energy markets into regional and pan-European networks**. Policy dialogue • continue its **policy dialogue with the Ministry of Economy and other stakeholders, promoting transparency and clarity of the renewable energy support system**. The Bank will **support the development of more market-based financing schemes for investments in renewables**, subject to the presence of a stable regulatory framework and commercial co-financing.

	• independent **renewable power producers face difficulties with access to the grid** which is controlled by the four vertically integrated regional energy companies • 2011 the government announced **plans to alter the renewable energy support system**	
CSU 2015	**BDS15-045 (Final)**	
	Mid-term strategy update [*despite the fact that the CS had only been implemented for one year*] Some important steps have been taken in **energy reforms**. New shale gas regulations to attract investment were adopted, based on expectations that exploration will speed up. The government has adopted a national nuclear power programme that involves the **construction of two nuclear power plants**. At present, coal still accounts for more than 80 per cent of Poland's primary energy supply, and a nuclear power plant may be one of the cheapest ways to cope with ambitious EU energy and climate goals. A **new bill on renewables has been adopted by the Polish parliament, which is expected to reduce regulatory uncertainty**. Strategic priorities • **Promoting the low carbon economy** T challenges Poland's power generation capacity is based **on hard coal and lignite** and the country remains one of the most energy intensive economies in the EU. **Power generation, distribution**, and municipal infrastructure do not meet industry standards on **carbon intensity**. The new targets of substantial primary energy savings by 2020 will **require substantial investments**. Investment is required in **grid management, including smart grid solutions, better access for renewable energy** and more efficient cogeneration. Activities • Development and approval of **the Integrated Approach to Polish Renewables** (the "IAPR"). • Approval of **two TCs forming part of IAPR**, i.e. (i) support to the power sector regulator for the implementation of the new renewable energy support system and (ii) support to the electricity distribution companies. • Orla Wind Farm, Darlowo Wind Farm and Radzyn Wind Farm projects. • **Restructuring of the power utility ENERGA projects**, resulting in mobilisation of €113 million of additional commercial co-financing for the electricity distribution network improvements. Policy dialogue • Continued policy dialogue with the **Ministry of Economy, the energy sector regulator, renewable/wind energy associations and the Polish parliamentarians** on the issue of regulatory uncertainty as regards to the new	Key outcomes • **Wind farm projects** supported by the Bank **together added 150 MW of wind energy generation capacity** and overall projects signed in 2014 resulted in annual reduction of CO2 emissions by 662 thousand tonnes. Furthermore, through the **restructuring of the ENERGA project**, the Bank supported further investments in electricity grid modernisation and, more specifically, **construction of new grid connections for renewables** - one of the main bottlenecks for renewables development in Poland. • In addition, wind farm projects previously financed by the Bank **demonstrated the availability of financing for new renewable energy projects despite the on-going regulatory uncertainty**. This is evidenced by the fact that the Bank was able to mobilise commercial co-financing that was not available in 2013, in the amount of €85 million. Implementation challenges • The **sharp fall in oil and energy prices** has, for the moment, **rendered the relatively high cost renewable energy less attractive**. This is impacting the viability of new renewable energy projects. • **Regulatory instability continued to impact negatively the legislative framework on renewables** required for new investments. The Bank is engaged in close policy dialogue with the authorities on this issue (i.e. details of the auctioning system, transition period). The new bill on renewables adopted by the Polish parliament in February 2015 is expected to reduce regulatory uncertainty

	renewable energy support system (i.e. details of the auctioning system, transition period). • As part of IAPR, **dialogue with Polish authorities on the need for electricity distribution network improvements** aimed at increasing grid connection capacity for renewables. • EBRD **advocated amendments to the gas law, the energy law and renewables** (the so-called Small Energy Triple Package) which were introduced during 2014. Nevertheless, further amendments to the legislation are required. • Continued policy dialogue with the PSE (electricity transmission grid operator), Gas System (gas transmission system operator) and the energy sector regulator on the **needs for construction of new cross-border connections for electricity and gas**.	
CSU 2016	**BDS16-035 (Final)**	
	Strategic priorities • **Promoting the low carbon economy** Activities • Provision of long term loans (totalling approx. €72 million) under **three distinct operations (Polenergia Wind Portfolio, Banie Wind Farm and extension of PEPSA Wind Portfolio**) to finance construction and operation of wind farms with the total installed capacity exceeding **110MW,** resulting in the CO2 emission reduction of approx. 190 thousand tonnes per annum. Policy dialogue • Continued policy dialogue with **the Ministry of Economy**, **the energy sector regulator, renewable/wind energy associations and the Polish parliamentarians** on the issue of the future support system for renewable energy (i.e. details of the auctioning system and subsequent investments monitoring). • Implementation of **TC assignment** aimed at **strengthening the capacity of the power sector regulator** in connection with the implementation of the new renewable energy support system. • As part of Integrated Approach to Polish Renewables (IAPR), **dialogue with Polish authorities on the need for electricity distribution network improvements** aimed at increasing grid connection capacity for renewables, as well as dialogue with wind energy association and electricity distribution system operators on solutions for the intermittent nature of renewable generation.	
CSDR 2017	**BDS17-042 (Final)**	
	Transition progress Removal of positive watch in renewable energy, following June **2016 new law that creates prohibitive conditions for establishing new on-shore wind farms and burdensome**	**CSRF** 2016 Energy Savings GJ/y 4,061,816

	requirements for existing farms (property tax changes). Strategic priority • Promoting the **low carbon economy** Objective 1 • Support the development of energy efficiency and **renewables** Activity • Provided new €37m commitment for financing the **Banie 2 windfarm** at a time of great regulatory uncertainty caused by the July 2016 replacement of the existing Green Certificates support system with new feed-in premium auctions. • **Engaged in extensive PD**, **backed by TC** to the regulator, **on the new renewables support scheme**, capped by the successful 100MW renewable capacity auction in December 2016	<table><tr><td></td><td>(-6% yoy)</td></tr><tr><td>GHG Reduced ktCO2/y</td><td>276 (-37% yoy)</td></tr></table> [*these indicators are aggregated GET figures from ICA and FI projects, no contribution from SIG*]
2017-	**BDS/PO/17-01 (Final)**	
	<u>Diagnostics (SGS17-246)</u> **Diversifying the energy mix away from hydrocarbon sources** and improving energy efficiency will help Poland capture the substantial opportunities in the global transition to the Green Economy and tackle major air quality issues • Poland has **energy intensity** more than two times higher than the EU average which is encouraged by large deposits of fossil fuel. • **Lack of consistency, instability of regulations** prevents Poland from capturing the opportunities in emerging industries linked to new energy sources30. It also **distort energy prices and provide inadequate and late adoption of incentives**, effectively inhibiting more efficient energy usage and reduction of GHG emissions <u>Implementation of previous strategy</u> **Good results in GET**: more than €1 billion in investment with an average ABI share of 46% over the strategy period. However, the **volume of GET commitments decreased from 2013 to 2017 as a result of regulatory uncertainty** in renewable energy brought about by the July 2016 replacement of the Green Certificate support system with new feed-in premium auctions, as well as other regulatory changes. Despite ongoing regulatory uncertainty, financed several windfarms (including **Orla, Radzyn, Banie and Darlowo), resulting in more than 775,000 MWh/y of** electricity generated from renewable sources. Provided **ongoing policy engagement on the new renewables support scheme**, leading to the successful 100MW renewable capacity auction in December 2016.	Strategic orientations • EBRD will **continue to finance viable energy projects under the new auction-based system, with appropriate safeguards**. Further **policy advocacy and reform engagement under the Integrated Approach for Polish Renewables** will facilitate investments in new renewable energy generation capacity Priority 2: Promoting Green Economy Transition Objectives: Increased use of renewable Energy; More diversified energy mix Activities: • Support **renewable energy projects and effective implementation/leveraging of the regulatory framework** (e.g. wind energy regulations, new auction framework) to further incentivise renewable energy production and consumption • Seek to **improve the energy mix (including CHP units) by financing alternative low GHG emission technologies** (e.g. gas-fired, including biogas) and second generation biofuel facilities as well as promoting the concept of energy clusters Indicator: Renewable energy produced (MWh/y)

<table>
<tr><td></td><td>Very few opportunities to participate in gas market liberalisation and energy infrastructure due to abundant EU/EIB financing and SOE dominance. EBRD nonetheless financed the TAMEH CHP modernisation and PGE's new renewables connection capacity and distribution grid.</td><td></td></tr>
<tr><td>CSDR 2018</td><td>BDS18-039 (Final)</td><td></td></tr>
<tr><td></td><td>No CSDR for Poland</td><td></td></tr>
<tr><td>CSDR 2019</td><td>BDS19-051 (Final)</td><td></td></tr>
<tr><td></td><td>Financing of renewables was halted by regulatory uncertainties;

Way forward

New renewable power generation investments unlocked by successful policy dialogue resulting in new renewable energy auctions

Strategic priority

• Promoting Green Economy Transition

Objective 2:

• Increased use of renewable energy; More diversified energy mix

Activities

No new investments in renewables due to regulatory uncertainties.

• Successful €58m restructuring of wind projects with Polenergia, which allowed the projects to regain commercial viability.
• Assisting other wind projects to manage temporary financial distress related to adverse changes in the market and regulatory environment, including via policy dialogue with the Polish authorities and the EU.
• Preparation of initial projects under the new renewable energy support system, with expected EBRD commitment of min of €60 m.
• Policy dialogue on the future energy mix in Poland.</td><td>CSRF
<table><tr><td></td><td>2018</td><td>Since 2018</td></tr><tr><td>Energy saved (Gj/y)</td><td>625,662</td><td>625,662</td></tr><tr><td>Total CO2 reduced (ton/y)</td><td>175.6</td><td>175.6</td></tr><tr><td>Renewable energy produced (MWh/y)</td><td>0</td><td>0</td></tr></table>
[these indicators are aggregated GET figures from ICA and FI projects, no contribution from SIG]</td></tr>
<tr><td>CSDR 2020</td><td>BDS20-051</td><td></td></tr>
<tr><td></td><td>Significant re-engagement has been achieved in renewable energy projects that paved the way for promising pipeline in coming years.

Way forward

Scaling up of engagement in projects focused on renewable energy generation

Strategic priority

• Promoting Green Economy Transition

Objective 2:

• Increased use of renewable energy; More diversified energy mix</td><td>CSRF
<table><tr><td></td><td>2019</td><td>Since 2018</td></tr><tr><td>Energy saved (Gj/y)</td><td>28,265,238</td><td>28,890,900</td></tr><tr><td>Total CO2 reduced (ton/y)</td><td>876</td><td>1,052</td></tr><tr><td>Renewable energy produced (MWh/y)</td><td>722,600</td><td>722,600</td></tr></table></td></tr>
</table>

	Activities • Re-engaged in renewable energy generation projects through signing two transactions, **Potegowo** Windfarm for €49.1m and **Szymankowo** Windfarm for €9.9m. • Potegowo Wind Farm is the **first project in Poland financed under the new auction based support scheme**, demonstrating its commercial viability. • Project Szymankowo has been structured as the **first ever merchant wind farm project** in Bank's Countries of Operation (i.e. the investment was possible without any formal support scheme or long term contracts).	

SECTOR STRATEGY

ENERGY SECTOR STRATEGY		
	Context/ Challenges (ATCs)	**Strategic priorities/ directions (ATCs)**
Energy Ops policy	**BDS06-093 (Final)**	
	Energy efficiency: • Even the most advanced are less energy efficient than any of the EU-15; • In the more advanced countries there have at least been significant improvements over the last five years. The challenge in these countries will be to tackle the wide-ranging and **complex structural reforms required to change patterns of energy use and investment priorities**. Renewables: • In the new EU member states the regulatory issue is now being addressed (in line with the requirements of the **EU Renewables Directive**) but implementation is at an early stage and few projects have yet been completed. There are also often technical constraints Fossil fuels • This is also in line with EU policy, which will particularly affect advanced countries and those that are or will be part of the EU's internal energy market as part of ECSEE; a regional market – with competitive despatch and optimised transportation interconnections, and allowing for a fair diversification of fuel inputs and demand centres – will give an efficient price signal for development of new or rehabilitated generation and should eventually reduce the need for long term off-take agreements Assessment of T-gaps for ATCs – Annex2, p. 61+	• *No specific Bank approach/priorities,/action outlined for the ATCs*
Energy strategy	**BDS13-291 (Final)**	

	ATCs T gaps • EU's third package of new electricity and gas Directives, adopted in July 2009, has been the main driver of reforms • **Legal and regulatory framework** to implement reforms and to follow EU requirements **mostly in place** • Adequate **legal and institutional framework for sustainable energy is also in place**; however, the **renewable energy market has been marked by regulatory uncertainties** in some of the countries. • Process of **unbundling has been mostly completed** in all advanced countries; private sector participation remains limited due to the dominant position of state-owned companies • **Large investment needs** to upgrade their outdated energy infrastructure to meet their commitments under EU environmental legislation such as the Industrial Emissions Directive	• The Bank will prioritise energy efficiency across all its countries of operations. The **EU energy sector legislation and EU climate targets** set the Bank's agenda for those countries which are EU Member States, candidate countries for EU membership or which have adopted much of this legislation through the ECSEE. This prioritises the **low carbon transition, unbundling, market coupling and promoting security of supply**.
Energy strategy	**BDS18-237 (Final)**	
	• No specific regional context for ATCs	• *No specific Bank approach/priorities,/action outlined for the ATCs*