

JASPERS Networking Platform Supporting investments in Smart Grids in 2014-2020 EIB's Financing for Smart Meters

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Background information on the EIB and eligibility

- Methodology used for EIB appraisals
 - Main costs and benefits to identify
 - Examples of projects



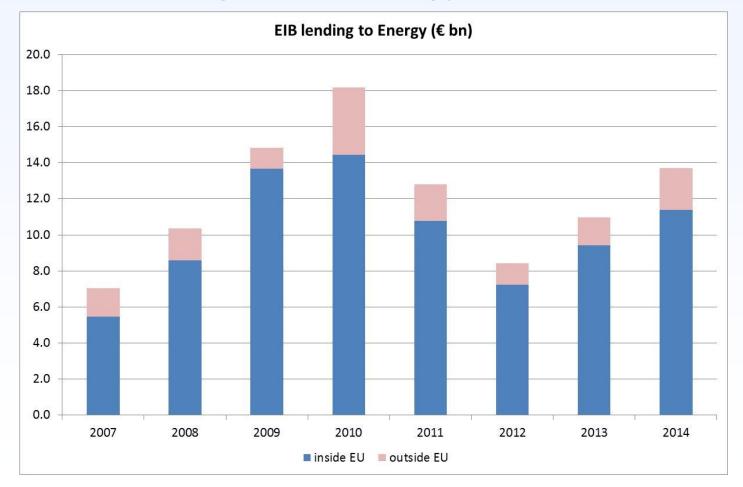
- There are a number of key EU legislative instruments promoting smart metering
 - The <u>Directive on the internal markets</u>, <u>2009/72/EC</u> Where roll-out of smart meters is assessed positively, at least 80% of consumers shall be equipped with intelligent metering systems by 2020;
 - <u>Gas Directive 2009/73/EC (Annex 1)</u>

Requires Member States to prepare a timetable for the roll-out of smart meters;

 Smart meters are eligible for EIB's financing, i.e. via corporate loans or project finance. The Bank's energy lending criteria (July 2013) clearly states that distribution investment programmes, including roll-outs of smart meters and, more comprehensively, smart grid demonstration projects, is one of the priorities.



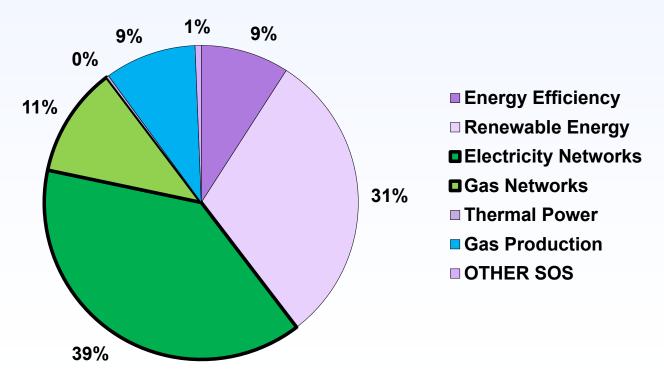
EIB's lending to the energy sector





 For the past 5 years, 45% of all signatures in Energy were in energy networks

2014 EIB lending to Energy = 13,5 € bn -> 50% for networks





- Smart meters ≠ smart grids
- Less potential projects for smart meters in gas, in comparison with electricity, explained by the difference in results of national CBAs



- Evaluating smart meter projects Just as any other project for the EIB, i.e. economic interest evaluated through a Cost Benefit Analysis
 - Specific conditions applied to the project
 - Economic life, regulation (incentivizing or not; level of cost control, ...), technology applied (relevant for the list of benefits to expect), etc.
 - Relevant costs and benefits that are expected by the Promoter – some only qualitative, but goal is to quantify as many as possible
 - ... Standardization allows for comparison of projects

- First things to know about the project:
 - CBA results in the country and Regulator's view on the project (regulated return rate envisaged; time-of-day tariffs envisaged?)
 - Main objectives of the roll-out (demand management; peak shaving; cutting commercial losses; regulatory obligation;...)
 - Unit cost expected for the meters

Cost Benefit Analysis – detailed information to collect

- Relevant costs
 - Capex (meters, installation, IT, communications, etc.)
 - Opex (incremental)
- Relevant benefits
 - Avoided costs
 - Conventional Meter Replacement Savings (avoided capex)
 - Reduced Maintenance and Meter Reading Cost Savings (avoided opex)
 - Reduction in commercial losses (fraud/theft), if applicable
 - Savings from induced reduction in demand (avoided generation)
 - Savings from peak shaving, if applicable
 - Reduced CO2 emissions from the above
 - Customer time savings (from avoided meter reading visits)

EIB's Financing for Smart Meters – Examples (I)



- First application at EIB
- GrDF project with 2.8 million gas meters
- France
- Q2/2013
- Followed by...

- FRANCE - ID: 2012-0521												
Economic Analysis												
(2013 Constant Prices) General Assumptions	Units											
Discount Rate (SDR)	%	5										
Start Year End Year	-	2016 2031										
Investment Cost	MEUR	413										
			2014	2015	2016	2017	2018	2019	2020	2025	2030	2033
CO ₂ Allowances Scenario (base case)(2013 money) CO ₂ emissions of supplied gas	EUR/tCO ₃ tCO ₂ /TJ	56.1	32.3	33.4	34.5	35.7	36.8	37.9	39.0	44.6	50.2	50.2
Natural Gas Prices (2013 money)	EUR/MWh	1.02	25.4	22.7	22.8	22.9	23.0	23.1	23.2	23.6	24.1	24.1
Exchange rate	EUR/USD	1.3										
Average annual growth gas demand without project Impact on gas demand with project	Δ/y Δ/BAU	-1.3% -1.5%										
Meters installed (EIB project) Meters installed (TOTAL GrDF)	Nr Nr	2,818,286 11.514.499										
EIB project % in total GrDF investment programme	%	24.5%										
GrDF - Gas smart meters	Units	PV	2014	2015	2016	2017	2018	2019	2020	2025	2030	2033
Project Costs CAPEX per item of investment												
Main Equipments	MEUR		0	0	8	62	96					
IT and communications Civil works / Installation	MEUR		43 0	24 0	5	5 48	6 74					
Studies	MEUR	344	10	12	14	0	0					
OPEX	MEUR	344	52	36	33	115	1/6	0	0	0	0	0
Engineering and supervision	MEUR		2.3	2.9	8.7	18.8	18.0	13.2	12.7	0.8	0.8	0.8
IT and communications Replacement/failure of smart metering systems	MEUR		7.2	21.7 0.1	34.2 0.2	29.9 0.4	27.4 1.1	26.0 1.2	11.2 1.0	4.3 0.4	4.3 0.4	4.3 0.4
Costs of residual meter readings	MELLR		0.0	0.0	0.0	0.0	0.1	0.2	0.9	0.4	0.4	0.4
Call centre/customer care Staff Training - Conduct of change (including in project co	MEUR		0.1	0.5	0.6	1.7 5.3	1.6 5.7	0.0	0.0 5.2	0.0	0.8	0.8
Concentrator rental Revenue reductions (e.g. through more efficient consump	MEUR		0.0	0.0	0.1	0.9	2.0	1.7	1.6	1.1	1.1	1.2
Additional bill printing costs												
TOTAL	MEUR	317	10	26	45	57	56	48	33	8	8	8
Externalities and others Sunk costs from early meter replacement (within lifetime	MEUR				1	7	11					
Cost of changes to information system (for suppliers) Estimated Net Job Loss	MEUR				1.0	0.0	0.1	0.1	0.2	0.3	0.3	0.3
Job Loss impact on GDP	MEUR											
CO ₂ emissions CO ₂ emissions Cost												
CO2 emissions Cost TOTAL		18	0	0	2	7	11	0	0	0	0	0
TOTAL COSTS	MEUR	678	62	61	80	179	242	48	33	8	8	8
Project Benefits												
Number of Meters replaced (G4)	Nr/y Nr/y				127,536	1,050,302	1,634,984 1,576,569					
Number of Meters replaced (G4) Number of Meters replaced (G6)	Nr/y Nr/y				127,536 3,270	1,014,388 26,010	1,576,569 40,425					
Number of Meters replaced (G4) Number of Meters replaced (G6) Number of Meters replaced (G10) Average Unit Price of standard G4 meters (equip+install.)	Nr/y Nr/y Nr/y EUR/meter	60.6			127,536	1,014,388	1,576,569					
Number of Meters replaced (G4) Number of Meters replaced (G6) Number of Meters replaced (G10) Average Unit Price of standard G4 meters (equip+install.) Average Unit Price of standard G6 meters (equip+install.)	Nr/y Nr/y Nr/y EUR/meter	88.8			127,536 3,270	1,014,388 26,010 9,904 65	1,576,569 40,425					
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EIB's Financing for Smart Meters – Examples (II)



- Followed by:
 - Gas
 - Italy (1.2M)
 - UK (5M+)
 - Electricity
 - Spain (6.9M)
 - Slovenia (0.2M)
 - Poland (0.3M)
 - UK (5M+)
 - Austria (smart grids)
- Prices are quite diverse
- Different technologies, regulatory setups, …







For info or further questions on this presentation, please contact:







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