



## 1. Project Data

<b>Project ID</b> P112578	<b>Project Name</b> PVT SECTOR RE and EE		
<b>Country</b> Turkey	<b>Practice Area(Lead)</b> Energy & Extractives	<b>Additional Financing</b> P124898	
<b>L/C/TF Number(s)</b> IBRD-77140,IBRD-77150,IBRD-81040,IBRD-81140,TF-94498,TF-94499	<b>Closing Date (Original)</b> 31-Dec-2014	<b>Total Project Cost (USD)</b> 1,150,000,000.00	
<b>Bank Approval Date</b> 28-May-2009	<b>Closing Date (Actual)</b> 31-Dec-2016		
		<b>IBRD/IDA (USD)</b>	<b>Grants (USD)</b>
Original Commitment		500,000,000.00	100,000,000.00
Revised Commitment		975,257,857.02	100,000,000.00
Actual		950,658,649.95	100,000,000.00
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## 2. Project Objectives and Components

### a. Objectives

The Project Development Objectives (PDO), as cited on page 5 of the Loan Agreement, were to help increase privately owned and operated energy production from indigenous renewable sources within the market-based framework of the Turkish Electricity Market Law, enhance energy efficiency and thereby help reduce greenhouse gas emissions.



**b. Were the project objectives/key associated outcome targets revised during implementation?**

No

**c. Will a split evaluation be undertaken?**

No

**d. Components**

1. [Estimated cost at appraisal: IBRD: US\$500 million; CTF: US\$100 million; actual costs: US\$3,099.56 million];.

The project consisted of a single component providing two credit lines, one each for the Turkish Development Bank (TKB) and the Turkish Industrial Development Bank (TSKB), to finance renewable energy (RE) and energy efficiency (EE) investments. The Project, using US\$500 million of IBRD resources and CTF (Clean Technology Fund) resources of US\$100 million, was supported by a parallel technical assistance program financed by other donors, focusing on capacity building for energy efficiency. Initially, 10 percent of the IBRD loan was allocated for energy efficiency. The ultimate proportion between RE and EE financing would however depend on market and investor appetites, as well as on credit decisions made by the financial intermediaries (FIs). The funds supported three categories of sub-projects: Commercial RE (hydro-power projects of capacity exceeding 10 MW), Emerging RE (including solar, biomass, geothermal, wind and hydro-power projects of less than 10 MW capacity), and EE (sub-projects that would achieve a minimum 20 percent reduction in energy consumption, or cost savings from energy consumption of at least 50 percent. Funding from the Clean Technology Fund (CTF) was provided to Emerging RE and EE categories, for between 15 and 20 percent of their project investment costs.

Technical assistance (TA) financed by other donors, provided in parallel with RE and EE investments, was intended to build capacity among banks and industry to help reduce the barriers to EE investments.

Potential sources identified for this TA included *Kreditanstalt für Wiederaufbau* (KfW), United Nations Development Program (UNDP), *Agence Française de Développement* (AFD) and Japan International Cooperation Agency (JICA).

The single component design was maintained until Project closure, though the project underwent a Level-2 restructuring in September, 2011 and received Additional Financing (AF) in November the same year. Since private investments in hydropower had become more attractive during implementation, some adjustments were made at restructuring to the categorization of small hydro-power RE projects, from Emerging RE to Commercial RE, in order to discontinue their eligibility for CTF funding. At the same time, TSKB loan funds were reallocated from RE to EE (and the results framework updated to reflect these changes). The Additional Financing provided to the Project further shifted this reprioritization towards non-hydro RE and EE, through a limit on funding for Commercial RE, and a clarification of eligibility criteria for EE.

**e. Comments on Project Cost, Financing, Borrower Contribution, and Dates**

**Project Cost:**

The Additional Financing in 2011, which also extended the closing date of the operation, brought an additional US\$500 million to the Project, to meet the high demand that had been generated for RE and EE investments. Commercial financing at the time remained limited for newer RE technologies and industrial



EE, prompting the Bank to request the TKB and TSKB to focus more on non-hydro RE and EE sub-projects. Final cost estimates were of the order of US\$3099.56 million, or 269 percent of the estimate at appraisal. This increase was financed, apart from the funds from the AF, by the borrower and by contributions from other donors.

**Financing:** The sources of funding for this project consisted of IBRD resources of US\$1,000 million (taking into account the AF), in addition to \$100 million from the CTF. Sponsor equity from the borrower, plus contributions from other donors, totaled US\$2,048.9 million at closure, against an appraisal estimate of US\$551.25 million.

**Borrower Contribution:** The borrowers were TKB and TSKB, which received lines of credit, the loan guaranteed by the Government of Turkey. At appraisal, borrower contribution of US\$550 million, including though sponsor equity contribution of US\$300 million was envisaged. Borrower contribution was vastly exceeded by closure, mostly on account of donor contributions, as noted above.

**Dates:** The project was originally envisaged to close on December 31, 2014. However, on account of the Additional Financing, the closing date was extended to December 31, 2016.

### 3. Relevance of Objectives & Design

#### a. Relevance of Objectives

The project's development objective of increasing privately-owned energy production from renewable sources was consistent with the priorities outlined in Turkey's current Tenth Development Plan (2014-18), which (Section 1.14) gave priority to an energy efficiency improvement program, which included a focus on developing sustainable financing mechanisms to encourage energy efficiency investments, and as part of a domestic resource-based energy production program (Section 1.13), to accelerate the utilization of non-hydro renewable resources for electricity production. The National Renewable Energy Action Plan (2013-23) defined specific RE targets and measures to achieve them. Improving demand-side energy efficiency was a key policy objective for Turkey, reflected in the Energy Efficiency Law (2007) and the Energy Efficiency Strategy (2012-23), which provided a road map for EE actions for all sectors of the economy. The reduction of greenhouse gas (GHG) emissions was also a very relevant policy objective, supported through measures incorporated in the Climate Change Strategy (2010) and Action Plan (2012).

The Bank Group's Country Partnership Strategy FY12-15, and Progress Report FY12-16, highlighted the strategic objective of deepening sustainable development, leading to the objective of improved supply of reliable and efficient energy, increased use of RE and climate actions under implementation. Clean energy is expected to remain a core element of the forthcoming Country Partnership Framework, FY17-21.

#### Rating

Substantial

#### b. Relevance of Design

The relevance of Project design and implementation was High. There was a clear causal relationship between



the activities of the Project under its single component and the PDO. Sub-projects financed under the loan, whether RE or EE investment, directly contributed to RE generation from indigenous sources or enhanced EE over its life, thereby contributing to the reduction of GHG emissions. The Project was designed to address a key constraint to the development of RE and EE in Turkey, namely a lack of long-term financing.

Implementation arrangements through TKB and TSKB were adequate to reach project sponsors and implement RE and EE sub-projects. The Project's design, at appraisal, provided for fairly comprehensive technical assistance (TA) to be made available to TKB and TSKB in the form of capacity building and training (though it appears that in practice the TA provided during implementation was limited and could have been better coordinated with the Project's needs).

The Additional Financing, and earlier restructuring, did not result in a change in PDO, though the project was scaled up and results indicators revised, based on the experience gained during the original loan.

Implementation arrangements continued to be adequate and responsive to changing needs during this phase, with priorities shifting towards the financing of renewable energy technologies and energy efficiency projects, and the Project remained relevant throughout.

## **Rating**

Substantial

## **4. Achievement of Objectives (Efficacy)**

### **Objective 1**

#### **Objective**

Objective 1: "To help increase privately owned and operated energy production from indigenous renewable sources within the market-based framework of the Turkish Electricity Market Law:

#### **Rationale**

##### **Outcomes:**

The project set out to enhance the generation of power from renewable (RE) sources, including small hydro, wind, geothermal, solar and biomass. PDO indicators were revised at restructuring to realign resources away from hydro and towards other RE sources, and again at the time of the additional financing, to take account of the additional resources provided. Key outcomes were framed in terms of achieving an increase in both capacity and production of renewable energy from various sources, and in the relative share of the generation of renewable energy relative to total generation. In terms of results, these outcomes were mostly achieved. Generation capacity of renewable energy - hydropower as well as non-hydropower (i.e. emerging RE) met its target, though to a much larger extent for non-hydro RE plants (by 163 percent - reflecting the shift in priority and resources allocated in favor of this segment). Consistent with this trend, the increase in capacity for hydropower plants met only 75 percent of its target. Potential incremental production of electricity and share of renewable electricity generation to total generation more than achieved their targets. The development of sub-projects within the market-based framework of the Turkish Electricity Market Law was mostly successful. The Project helped alleviate one of the key barriers to RE investments, namely the limited availability of financing for a sector where capital requirements were relatively high. In addition to



loans from IBRD and CTF, Feed-In Tariffs (FiT), providing floor price guarantees, and purchase guarantees for renewable energy provided positive incentives to attract commercial finance into the sub-projects. A total of over US\$2 billion was provided by international financial institutions (including IFC), commercial banks and owners equity, thereby leveraging nearly double (1.95) the US\$1.05 billion financing provided by the World Bank and CTF in aggregate. This was significantly higher than the leverage ratio of 0.92 envisaged at appraisal.

**Outputs:**

No specific output indicators were specified at appraisal other than the commitment and disbursement of funds by TKB and TSKB, and the percentage of RE and EE in the portfolios of these FIs. TKB was able to commit 95 percent of its loan funds and disburse 90 percent (on account of the need to cancel some financing, as mentioned above), while TSKB was able to commit and disburse 100 percent of its loan funds. The percentage of RE and EE projects in their portfolios significantly exceeded target values, mostly on account of the change in priorities expressed during restructuring.

**Rating**

Substantial

**Objective 2**

**Objective**

“To enhance energy efficiency”:

**Rationale**

Some progress was made in improving energy efficiency, but outcomes fell somewhat short of expectations. The target set for energy savings from energy efficiency investments (EE) under the Project, was fairly modest at appraisal (554 Tcal). Based on the initial EE portfolio, which had been performing well at the time, it was revised under the additional financing to a much more ambitious level (3,495 Tcal). However, as a result of the domestic political situation in Turkey in 2016, which led to a slowing down of a number of energy efficiency sub-projects, actual achievement was of the order of only 2,600 Tcal, or 74 percent of the target. As a result, TKB ended up having to cancel EUR16.57 million and US\$0.82 million from its loan under the additional financing.

It should be mentioned however that there was some variation in the methodology used for estimating energy savings between the two main financial institutions TKB and TSKB, which ultimately impacted the estimation of reported savings. TKB (and most other banks in Turkey) used a much lower coefficient (0.33) to determine primary energy savings potential than TSKB (which used 0.55), leading to a more conservative estimation of actual savings in TSKBs sub-project portfolio. Had TSKB used the same assumptions as TKB, the Projects reported energy savings would actually have been around 3,906 Tcal or 112 percent of the target. By completion, the Project supported 29 EE sub-projects (3 via TKB and 26 via TSKB), mostly in the cement, chemicals and steel sectors.



**Rating**  
Modest

### **Objective 3**

#### **Objective**

“To reduce GHG emissions”

#### **Rationale**

The Project contributed to a reduction in greenhouse gas (GHG) emissions through a replacement of fossil fuel-based energy production by either renewable (RE) sources or energy efficiency (EE) measures. Outcomes from EE exceeded (102 percent) target values, while those from RE fell marginally (84 percent) short mostly because actual GHG emission reductions from the Gurmat geothermal power plant (the largest RE plant funded under the Project) turned out to be lower than expected on account of a higher-than-expected CO<sub>2</sub> content in the geothermal brine from the specific geothermal field where the sub-project was located. Also, complicating expected outcomes, different grid-emission factors were used at appraisal and by the FIs, TKB and TSKB. TKB used a factor provided by the Ministry of Environment & Urbanization, and TSKB chose to calculate it based on the UNFCCC methodology. Though both approached produced relatively similar grid-emission factors, ranging from less than 700 to about 570 tCO<sub>2</sub>/GWh in 2016, they were considerably lower than the factor of 1,031 tCO<sub>2</sub>/GWh used in the PAD. The grid-emission factors used by the FIs seem to have been more appropriate, as they represented the combined margin CO<sub>2</sub> emission factor for grid-connected power generation in each year. Using the grid-emission factor from the PAD, estimated emission reductions from RE would be more than 125 percent of the target value.

It should be mentioned that the cost-effectiveness of CTF financing (CTF US\$ per ton of CO<sub>2</sub> reduction) which had been included as one of the PDO indicators at appraisal exceeded expectations, over-achieving its target to the extent of 345 percent. The larger share of EE projects in the portfolio than anticipated at appraisal contributed to this outcome, as was the fact that CTF funding generated substantial additionality for geothermal and EE sub-projects.

**Rating**  
Substantial

## **5. Efficiency**

### Administrative and Operational Efficiency:

None of the loan proceeds were utilized for project management by TKB and TSKB, allowing 100 percent of the Project's financing to contribute to investments in RE and EE.



### Economic and Financial Efficiency:

The Project exhibited substantial cost effectiveness of the funds it received. Estimates of the effectiveness of costs for the 53 RE sub-projects that accounted for 75 percent of the Project's financing showed investment costs per kW of capacity installed that were below estimates made at appraisal and were within or even below the benchmark ranges established by the International Renewable Energy Agency (IRENA) for each category. The one exception was the Gurmat geothermal sub-project, whose investment costs per kW exceeded the benchmark range by 20 percent. Gurmat however accounted for 32 percent of the investment cost for all RE sub-projects, so this deviation did have some impact on the overall average.

For EE sub-projects, benchmark comparisons were not available; hence, their efficiency could only be evaluated through cost benefit analysis. For a sample of 29 RE and EE sub-projects, representing nearly half the total investment cost in the Project, economic rates of return (ERR), taking carbon benefits into account, were marginally higher during post-completion than for prototype RE sub-projects reviewed at appraisal, and on par with or marginally lower than for comparable EE sub-projects. Looking to the financial return to investments (FRR), 26 out of 29 sub-projects exceeded the threshold of 8 percent established at appraisal. The cost effectiveness of CTF funding was high. US\$100 million of CTF leveraged US\$898 million of financing from international financial institutions, which was substantially higher than the US\$400 million estimated at appraisal. Across all sub-projects, average cost was only US\$2.9 of CTF/tCO<sub>2</sub>, with a range of US\$1.1 to US\$11.8 million of CTF/tCO<sub>2</sub>. This is lower than the benchmarking results reported by CTF, of an average cost of US\$4 and a range from US\$1 to US\$40 of CTF/tCO<sub>2</sub>.

## **Efficiency Rating**

Substantial

a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal	✓	10.60	48.00 <input type="checkbox"/> Not Applicable
ICR Estimate	✓	16.30	48.00 <input type="checkbox"/> Not Applicable

\* Refers to percent of total project cost for which ERR/FRR was calculated.

## **6. Outcome**

The Project's relevance of objectives was rated Substantial at inception and continues to be so, and its relevance of design was rated Substantial. Achievement of project objectives is rated Substantial for Objective 1 (accounting for the bulk of the total investment cost), Modest for Objective 2 and Substantial for Objective 3. (Objective 2 might conceivably have been rated higher had a common methodology been employed by both FIs for estimating energy savings). Project efficiency is rated Substantial, overall. Based on this, the overall





outcome rating is Satisfactory.

**a. Outcome Rating**

Satisfactory

## **7. Rationale for Risk to Development Outcome Rating**

At appraisal, critical risks to development outcome were assessed as Moderate, overall. These stemmed mostly from the fiscal challenges faced by Turkey after the financial crisis, the possibility of inadequate demand from the private sector for new investment, and the possibility of delays in project implementation on account of delays in approval of CTF terms. Most of these risks were mitigated or were not realized. Post-completion, technical risks to the sustainability of development outcomes appear to be relatively low. Most sub-projects were subjected to rigorous licensing and appraisal processes, with each FI carrying out their own technical evaluation of each sub-project financed. Feed-in tariffs and purchase guarantees for RE would ensure that electricity generation by RE plants financed under the Project will remain viable. EE sub-projects can similarly be expected to continue to generate energy and cost savings. The Government appears to be committed to the development of RE and EE; as a result of which the regulatory framework is expected to remain conducive to RE facilities and EE measures.

That said, the only real risk appears to lie in the domestic political arena, where - as in 2016 - developments could adversely affect private investment in RE and the operation of EE measures. This risk is difficult to assess, but is not negligible.

**a. Risk to Development Outcome Rating**

Modest

## **8. Assessment of Bank Performance**

**a. Quality-at-Entry**

The design of the Project was appropriate to its development objectives and to the country's needs. Preparatory work took account of the performance of energy efficiency projects in other countries. This prompted the inclusion of sizeable technical assistance to build institutional capacity and help reduce barriers to EE investments. Implementation arrangements, replicated from the World Bank's preceding Renewable Energy project, were generally satisfactory.

That said, the Project's indicator targets at appraisal could have been set at a far more ambitious level, and a clearer definition of some of the results indicators would have helped improve consistency and attribution. The assessment of risks at appraisal, though reasonably comprehensive, failed to identify some important safeguards risks, especially environmental risks due to cumulative impacts of multiple hydro-power projects in one river basin, which required remedial action during implementation, and risks due to inadequate





capacity of financial institutions and sub-project sponsors to comply with the Banks safeguards requirements.

### **Quality-at-Entry Rating**

Moderately Satisfactory

#### **b. Quality of supervision**

The Bank team provided close support to TKB and TSKB during implementation on various issues, including environmental and safety of dam safeguards. The team closely followed the implementation of sub-projects and disbursements from the FIs to their sub-borrowers. The team also conducted site visits at hydro-power construction sites when necessary, which revealed the need for environmental remedial actions. In response to public concerns regarding hydro-power plants (HPPs) the Bank initiated a full review of all HPPs financed under the Project, and strengthened safeguards requirements, implementation and reporting. The financial institutions were reportedly satisfied with the close supervision, interaction and training provided by the Bank team, to help them comply with their safeguards requirements.

Eleven ISRs were archived over the six-year period, 2010-2016, which implies a reasonable frequency of supervision missions undertaken by the Bank over the life of the Project. Some intermediate years (2011-2013) saw only one ISR submitted in each; however regular discussions did take place with FIs during the course of other energy sector missions. The presence of field-based staff in the country office, including a social development specialist appointed in 2012, allowed for a continuity of dialogue with the borrowers.

### **Quality of Supervision Rating**

Satisfactory

### **Overall Bank Performance Rating**

Moderately Satisfactory

## **9. Assessment of Borrower Performance**

### **a. Government Performance**

The Government exhibited strong commitment to the Project, implementing various legislative measures that were helpful in promoting private investment into RE and EE. For RE, these included the Feed-in Tariff (FiT) scheme, land usage fee incentives for generation facilities, permitting generation of power of up to 1 MW without need for license, and purchase obligation of electricity from RE generators all of which helped reduce risk to investors. For EE, the EE Law of 2007, and its two Bye-Laws of 2008, which preceded the Project, required industry to set up an energy management unit and report on energy management activities to the Directorate General for Renewable Energy in the Ministry of Energy and Natural Resources. These requirements helped increase awareness of the potential for energy efficiency potential in industry, and would have had a positive impact on EE-related investments.



## **Government Performance Rating**

Satisfactory

### **b. Implementing Agency Performance**

TKB and TSKB were responsible for implementing the Project, by providing long-term debt finance to sub-project sponsors for eligible RE and EE investments. Sub-projects were approved by these FIs, in compliance with their respective Operations Manuals. The FIs were also responsible for monitoring and evaluation of results. Performance of the FIs in this regard was generally adequate during the implementation period. Both TKB and TSKB monitored their sub-projects, reported semi-annually on outputs and results, and made the necessary changes in product mix of their portfolios towards non-hydro RE and industrial EE, following the Project's restructuring.

That said, the FIs allowed minor safeguards issues to arise in the sub-projects, which impacted the Project's safeguards ratings from 2012 until closure. The FIs were unable to comply fully with the safeguards framework in some cases, or to provide the requisite documents required by the World Bank on a timely basis.

## **Implementing Agency Performance Rating**

Moderately Satisfactory

## **Overall Borrower Performance Rating**

Moderately Satisfactory

## **10. M&E Design, Implementation, & Utilization**

### **a. M&E Design**

M&E design was adequate. PDO indicators were based on the experience from previous projects plus analysis of sample projects, though targets defined at appraisal mostly turned out to have been relatively too modest, so that by restructuring/additional financing in 2011, almost all indicator targets had been significantly overachieved. To some extent, this may have been because the availability of co-financing for the Project (from sponsor equity and other borrowing sources) had been underestimated. In addition, differences between projected and actual capital costs for RE and EE investments may also have contributed. Most of these indicator targets were revised at restructuring/additional financing, barring two: (a) the indicator for emissions reduction potential: the target value for which remained high due to the differences in interpretation of grid emissions factor used between TKB and TSKB (see Section 4), and (b) the indicator for cost-effectiveness of CTF, the target for which had originally been set conservatively at US\$10 of CTF per ton of CO<sub>2</sub> despite scenario estimates at appraisal of between US\$4.98 and US\$8.16 per ton of CO<sub>2</sub>, and was not revised at restructuring.

PDO indicators designed at appraisal were somewhat weak in terms of attribution to the Project, as they did not distinguish between plant capacity and emissions reductions from FI sub-projects funded by the Bank/CTF and those funded from other sources. The results framework could have been made stronger, particularly since CTF was included in the Project, by the addition of indicators that tracked license approvals for different RE types to show how trends may have changed. The Operations Manual could



also have provided clearer guidance for calculating and reporting indicator values, which would have avoided the use of differential methodologies in estimating emissions reduction potential.

## **b. M&E Implementation**

The M&E system was managed by TKB and TSKB, which monitored the implementation of sub-projects and provided semi-annual reports on results obtained. Both FIs carried out their own financial and technical evaluations of each submitted sub-project, and conducted site visits as needed. An Impact Assessment undertaken by CTF on the RE and EE market in Turkey in 2013 assessed and verified the GHG emissions reductions and energy savings of the sub-project portfolios of both FIs.

As highlighted above, the lack of clear definition of PDO indicators and specific guidance for calculating indicator values led to some inconsistencies during M&E implementation. Some confusion regarding Indicator 3 on Incremental emissions reduction potential resulted in some Implementation Status & Results Reports (ISRs) including emissions reductions from both RE and EE sub-projects, rather than from RE sub-projects only, for this indicator. Secondly, as already mentioned (Section 4), the use of differential coefficients to determine energy savings by TKB and TSKB led to inconsistent estimates in the sub-project portfolios. Similarly, the FIs used different methodologies to determine grid emission factors, which moreover lower than those used in the PAD.

## **c. M&E Utilization**

Data and information collected by the FIs for monitoring and evaluation purposes were used to assess and calibrate the progress of the Project, especially to manage its product mix during implementation, adjust allocation of funds and eligibility criteria at restructuring and change the focus of the project (towards EE and non-hydro power RE in the portfolio). The FIs were to continue to monitor the sub-projects after Project closure.

## **M&E Quality Rating**

Substantial

## **11. Other Issues**

### **a. Safeguards**

The Project triggered (a) OP 4.01 Environmental Assessment, (b) OP 4.37 Safety of Dams, and (c) OP 4.12 Involuntary Resettlement. To avoid triggering the international waterways policy, a list of eligible river basins for hydro-power projects financed under the Project was defined. The Project was classified as FI (Financial Intermediary), as the borrowers were in fact financial intermediary institutions, which on-lent funds to project sponsors, who would undertake the actual sub-projects, which were mostly identified after loan approval. None of the sub-projects had any major compliance issues. Safeguards ratings in ISRs were in the Satisfactory range until 2011, and in the Moderately Satisfactory range thereafter until project closure (on



account of minor safeguards issues).

*Environmental:* As the sub-projects would be identified after loan approval, in accordance with the requirements of OP/BP/GP 4.01, the environmental assessment (EA) procedures to be followed by the FIs in their environmental safeguard review of individual sub-projects, as part of their overall project appraisal, were described in the Environment Policy Framework document and incorporated in their respective Operations Manuals. Both FIs implemented the Project in compliance with this Framework (which was designed to satisfy the requirement of both the Bank and the Government). Two issues arose during implementation, which were adequately addressed: (a) Potential cumulative impact of hydro-power projects (HPPs) within the same river basin: To address this potential problem, the Project's operations Manual was updated during restructuring in 2011 to include requirements for Cumulative Impact Assessments (CIAs) to be undertaken as part of the Environmental Impact Assessments (EIAs) to be carried out for each sub-project when initial screening revealed the possibility that ecosystem components could be affected. These CIAs were eventually formalized in a guideline that was incorporated in the Turkish EIA Regulation (Official Gazette No. 29186, November 29, 2014, requiring EIAs to assess cumulative impacts for high-risk projects. (b) Need for remedial actions: During visits of several hydro-power sites in 2011 the Bank team identified several issues in need of remedial action. These included the fact that sub-project screening did not take adequate account of associated infrastructure at sub-project sites, that ecological flows of less than 10 percent of the natural flow had sometimes been approved by the Turkish State Hydraulic Works, and that inadequate design and construction practices had been observed for some sub-projects. In response, both FIs conducted a full review of hydro-power sites and prepared mitigation plans which were subsequently implemented by sub-project sponsors. In addition, revisions were made to the Operations Manuals at the time of restructuring to add additional safeguards requirements, strengthen reporting and incorporate additional eligibility criteria for sub-loans.

*Safety of Dams:* The dam safety policy was triggered in several sub-projects. Though most sub-projects were implemented in compliance with the policy, some minor issues such as inadequate sediment management and poor quality of reporting were identified in some cases. Mitigation measures recommended by the Bank were implemented by the relevant sponsors, under oversight of the FIs.

*Social:* Involuntary Resettlement Issues: Some 35 RE sub-projects led to economic or minor physical resettlement (6 sub-projects), affecting 2,072 people, who were compensated for loss of assets. The FIs' lack of familiarity with the Banks resettlement policies generated some initial non-compliance issues (such as resettlement taking place in some cases without a Resettlement Action Plan). However, the FIs took the appropriate remedial actions from 2011, including updating the Resettlement Policy Framework (RPK) and conducting ex-post social audits. In addition, the Bank provided increased guidance and capacity building inputs to the FIs through a social development specialist appointed in the country office in 2012. In sum, the project appears to have been in compliance with safeguards requirements, overall.

## **b. Fiduciary Compliance**

Financial management arrangements were generally adequate throughout project implementation. Financial monitoring reports and Interim unaudited Financial Reports (IFRs) were produced automatically from the FIs systems. IFRs were satisfactory to the bank, and there were no delays in submission. Project and IFR-based financial statements were audited by private auditors, with audit reports being generally submitted in timely



fashion. Project financial statements had generally clean audit opinions.

As regards procurement, no procurement incompliance was determined during implementation of the Project. The Project Operational Manual (POM) prepared by the FIs described the procurement arrangements under the sub-loans. As set out in the Loan Agreement, sub-project sponsors used acceptable local private sector commercial practices, with the FIs being responsible for procurement oversight and review of proposed sub-projects, procurement plans and contracts. A consulting firm conducted an independent review of a randomly selected sample of procurements.

### c. Unintended impacts (Positive or Negative)

The preparation of the Guideline on CIA for hydro-power projects in Turkey, which resulted in a revision of the Turkish EIA Regulation was an unintended (positive) impact of the Project.

### d. Other

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## 12. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Satisfactory	Satisfactory	---
Risk to Development Outcome	Negligible	Modest	The level of political risk in Turkey currently is non-negligible and capable of impacting project sustainability
Bank Performance	Moderately Satisfactory	Moderately Satisfactory	---
Borrower Performance	Moderately Satisfactory	Moderately Satisfactory	---
Quality of ICR		Substantial	---

### Note

When insufficient information is provided by the Bank for IEG to arrive at a clear rating, IEG will downgrade the relevant ratings as warranted beginning July 1, 2006.

The "Reason for Disagreement/Comments" column could cross-reference other sections of the ICR Review, as appropriate.

## 13. Lessons

The ICR provides a number of lessons for projects of similar design, i.e. involving the provision of credit lines to one or more financial intermediary institution(s). The following lessons are drawn from those presented:



- Policy and regulatory support is essential for credit lines to have a transformational and sustainable impact. While the Project successfully addressed the key constraint of a lack of availability of long-term finance, conducive policies on the part of the Government such as the Feed-In Tariff (FiT) regime and purchase guarantees were essential to create demand among project sub-sponsors for investment in RE and EE. Similarly, the development of solar capacity was supported by an amendment in 2013 of Turkey's Unlicensed Generation Regulation, exempting small solar power generation (capacity of up to 1 MW) from licensing obligations, and making them FiT eligible. More specific policy and regulatory support (e.g. through a streamlining of permits & licensing) under the Project would have helped further improve the impact of the credit line by helping to remove barriers for less prevalent technologies, which in turn could have helped attract more commercial financing.
- Credit lines can be made more effective with technical assistance (TA). Especially to enable project participants meet safeguards requirements. Since financial intermediary institutions in a Project are likely to have different levels of capacity, TA provided in parallel with the participation of other donors can usefully complement the Banks own capacity building activities, e.g. in the carrying out of energy audits and feasibility studies. TA provided to the private sector and Government can be useful in stimulating a broader interest in project activities (e.g. in energy efficiency), and in disseminating results, which would encourage the participation of other commercial lending institutions. If, as in the case of this Project, TA is financed in parallel by other donors, continued coordination with these donors will be needed to ensure that the TA actually provided is complementary to the Banks own capacity building activities.
- Specific guidance (in the PAD and the Operations Manual) is needed for M&E, in order to ensure that there is consistency across FIs involved. If multiple FIs are involved in a project, specific guidance should be provided on M&E in the Operations Manual, to describe methodologies and assumptions, to ensure consistency in utilization of results indicators.

#### 14. Assessment Recommended?

No

#### 15. Comments on Quality of ICR

The ICR is clearly-written, concise and is consistent with OPCS guidelines. It provides a detailed summary of the Project, its design and implementation, safeguards and other key issues arising. The analysis of design and implementation issues is candid and fairly thorough. The ICR is especially critical of the Projects M&E: including shortcomings in the results framework and lack of guidance for calculating reported indicator values, thereby leading to inconsistency in methodologies adopted across FIs.

The assessment of the Project results is evidence based. The ICR lists (pages 35-37) the sub-projects supported by the project sponsors. It also analyzes in some depth the performance of the project in terms of its indicators and in the context of the economy.

The ICR includes the accounts of project performance provided by both project borrowers. No beneficiary



survey was conducted, nor a stakeholder workshop.

The ICR does contain one or two minor weaknesses. Information provided on the intensiveness and quality of the Banks supervision efforts was somewhat lacking in detail, especially for the early years of the Project. Some more details could usefully have been made available on the working of the incentive schemes (such as the FiT regime, land usage fee incentives for RE generation) that the Government made use of to facilitate commercial investments into RE and EE.

**a. Quality of ICR Rating**  
Substantial