

## CTF PRIVATE SECTOR PROPOSAL

<i>Name of Project or Program</i>	<b>Commercializing Sustainable Energy Finance Phase II (CSEF II)</b>
<i>CTF amount requested</i>	Investment – up to US\$29.45 million Implementation and supervision budget – US\$0.55 million (Annex A) <u>Total amount – up to US\$30.00 million</u>
<i>Country targeted</i>	Turkey
<i>Indicate if proposal is a Project or Program</i>	Program

### 1 DETAILED DESCRIPTION OF THE PROGRAM

#### **1.1 Proposal Context:**

The Commercializing Sustainable Energy Finance Phase II Program (CSEF II) is designed to further motivate transformation of sustainable energy (SE) lending practices in Turkey and to stimulate the market for deeper engagement of local financial institutions (FIs) in SE lending. This Program will focus on various SE areas where market barriers remain especially high, with particular emphasis on the nascent market of green buildings (primarily new-build with some overlap to existing housing renovations).

The proposed Program is fully consistent with the Country Investment Plan (CIP), which was endorsed by the CTF Trust Fund Committee (TFC) in January 2009, and the Updated CIP endorsed by the TFC in November 2012. While the original CIP articulated the need for the CTF to work on a broad spectrum of renewable energy (RE) and energy efficiency (EE) priority sectors, the updated CIP, among other areas, called for additional attention to tackling *the market barriers that have impeded scaling up of energy efficiency investments beyond the large industrial sector*. The CIP further highlighted that *tackling energy efficiency in Small and Medium Enterprise (SME), residential, municipal, and building sectors is critical*. Buildings (residential, commercial, and public) are responsible for 30 – 40 percent of the total energy consumption and present 20 – 40 percent potential energy savings.

The original CIP envisioned US\$50 million allocation to two IFC programs:

- US\$21.7 million for facilitating investment in RE and EE through commercial banks (Commercializing Sustainable Energy Financing program, CSEF); and
- US\$28.3 million for direct private sector investments into RE technologies.

The CSEF program has fully implemented its investment component by developing SME EE financing with a particular focus on leasing mechanism. It has engaged three leading leasing companies in Turkey, attracted more than US\$300 million of IFC’s and third party funds to this market, and triggered significant expansion of this market segment. Building on the success of the CSEF, the updated CIP allocated an additional US\$20 million to IFC for implementing the second phase of the CSEF Program (CSEF II), increasing the total Turkey IFC allocation to US\$70 million.

Since the CIP update, IFC has developed a strong pipeline of sub-projects that, when realized, will help expand the range of SE commercial financing and ramp up the investments into green buildings/green mortgages subsectors. To move ahead with this pipeline, IFC is seeking approval of the US\$20 million of the CTF funds under the CSEF II Program as well as reallocation and approval of the US\$10 million of the CTF funds from the IFC’s direct private sector RE investment program. These funds collectively will

provide US\$30 million to the CSEF II Program.

## **1.2 Country Context:**

According to the United Nations Framework Convention on Climate Change (UNFCCC), Turkey's growth in total Greenhouse Gases (GHG) emissions has been among the highest of all Annex I parties, having grown from 188 to 422 million tCO<sub>2</sub>e between 1990 and 2011. Turkey's emissions are now the 12<sup>th</sup> highest among Annex I countries and 23<sup>rd</sup> highest in the world, representing 0.8% of global GHG emissions.

The largest contributor to the Turkey GHG emissions, responsible for 79% of the total emissions, is the energy sector, followed by waste disposal (9.3%), and industries (8.9%). The country's strong economic growth and rising living standards have led to continued increase in energy demand (3% per annum between 1995 and 2012) and electricity demand (6.5% per annum during the same period), which, in turn, have driven emissions growth. Specifically, energy demand from Turkey's largest energy consumer – residential sector – has been growing rapidly and now is responsible for 33% of total energy consumption (with industry, transport, commercial and public services, and agriculture being 26%, 22%, 11%, and 7% respectively).

As of 2013, 78% of the energy demand was met by fossil fuels-based generation. Further, according to the World Bank<sup>1</sup>, low domestic fossil fuel resources resulted in over 70% of energy demand and practically all the current growth being satisfied by imported energy. If no significant steps are undertaken, the energy import proportion is expected to continue climbing. For example, IEA estimated that the Turkey's crude oil imports will double over the next decade. This heavy reliance on energy import adversely impacts the country's economic competitiveness and further worsens an already large current account deficit, exposing Turkey to significant energy price volatility.

In recognition of the need to rebalance the domestic energy demand and supply, the government has set ambitious targets towards improving the sustainability of its economy and strengthening its energy base by promoting EE improvements and domestic energy generation (with notable focus on RE). To achieve these targets, the government has already takes a series of important steps, including:

- Adoption of a new law on EE in 2007;
- Adoption of EE strategy in 2012 (which sets a 20 percent primary energy intensity reduction target for 2023 compared with the 2008 level);
- Amendment of RE law in 2011 and 2012;
- Accession to UNFCCC as Annex I party (moving from Annex II) and participation in Kyoto protocol;
- Establishment of General Directorate of Renewable Energy and Energy Efficiency in 2011; and many others.

An electricity pricing reform in Turkey in 2008 increased the residential electricity tariff by more than 50% (currently residential tariff is US\$0.156/kWh and industrial is US\$0.136/kWh). However, while the combination of high electricity tariffs and high cost of natural gas favorably affects the economics of EE projects, EE investments are still significantly lower than desired — in part because of the lack of general awareness and still limited dedicated financing available.

## **1.3 EE Sector Context:**

Since the adoption of the Energy Efficiency Law in 2007 (enacted in 2009), considerable achievements have been made in setting up regulatory and institutional frameworks to promote EE activities, including a comprehensive set of regulations issued in 2008 and 2011. To even further accelerate the realization of

<sup>1</sup> The World Bank, 2011, *Tapping the Potential for Energy Savings in Turkey*.

the Turkey's EE potential, the Government approved a new National Energy Efficiency Strategy in February 2012. The new Strategy sets an overall target of reducing Turkey's energy intensity by 20 percent by the year 2023 from the year 2011 level. The Strategy identifies the following main activities to improve Turkey's EE:

- Promote EE in the industry and service sectors;
- Reduce energy demand of buildings;
- Promote energy efficient appliances and products;
- Improve the efficiency of electricity generation, transmission and distribution; and
- Build capacity, market and financing for EE products, investments and services.

Over the last few years, these efforts have helped Turkey to see an increase in financing flows to EE projects, in particular to those undertaken by SMEs. For example, the CTF, by providing over US\$200 million, has enabled a series of activities conducted by the European Bank for Reconstruction and Development (EBRD), International Bank for Reconstruction and Development (IBRD), and IFC that promoted private sector investment in EE and RE projects in Turkey. By the end of 2012, backed by this commitment, the Multilateral Development Banks (MDBs) collectively provided and mobilized over US\$1,500 million.

Nevertheless, further support is needed to continue broadening the scope of EE measures to new segments of the Turkish economy—particularly in the residential buildings sector. While about one-third of the energy consumption in Turkey falls on the residential sector, the efficiency of buildings in Turkey is still sub-par, both for the existing building stock and for new buildings.

Historically, energy characteristics have not been considered during construction or refurbishing processes. More than 80% of the buildings in Turkey do not have sufficient heat insulation, still have single glazed windows, and use solid fuels for heating (mainly coal). The latter is particularly striking, considering that more than 80% of the housing stock is connected to the natural gas network. IFC assesses that there is a growing number of factors that are likely to drive an increase in investments in efficient buildings in Turkey:

- High and rising energy costs: Rapidly rising household energy consumption in parallel with the cost of energy resulted in a typical utility bill being around 10% of the household's monthly expenditures<sup>2</sup>;
- More conducive regulatory environment: Regulatory changes introduced by the government target various areas, including building efficiency through mandatory energy performance certificates (EPC) for new buildings since 2011;
- Rise in the individual property ownership: Greater degree of individual property ownership has led to higher levels of awareness about the relationship between capital expenditures in EE measures and operating costs; and
- Present seismic risk: 98% of the population are situated in zones with varying degrees of seismic risk and the government has instituted new building codes which require refurbishments (and demolitions) of a large part of the Turkish building stock.

The real estate market in Turkey is dynamic. In 2012, total housing sales of residential units (both new and previously owned) reached 431,485 units. The supply is expected to continue to grow and, over the next 10 years, add up to 6.5 million new units and up to 7.5 million existing units that will be refurbished or demolished and re-built, resulting in a market of 14 million residential units to be supplied by 2023. In addition, commercial real estate is also growing dynamically, especially in major cities, such as Istanbul (growing at 10%/year), Ankara, Izmir.

The real estate market is strong and the green buildings segment is emerging, but this growth of the green

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<sup>2</sup> As compared to, for example, that of 4% in US (based on U.S. DOE, 2005, *Residential Energy Consumption Survey* and U.S. DOE, 2012, *Short-Term Energy Outlook*).

buildings segment has largely bypassed the residential market. For example, as of today, 265 buildings have received LEED certification, with the bulk of them, however, being commercial buildings and only 10 residential ones. A similar pattern is observed among buildings that have obtained other types of EE certification (such as BREEAM, DGNB, etc.), with a tiny share of residential buildings among them. While the overall number of buildings receiving the certification above level C (minimal mandated by the government) is pretty high (over 27%, see Table 1), almost all the buildings are of non-residential use.

**Table 1. Distribution of the Performance Levels among the New Certified Buildings**

<i>Energy Label</i>	<i>Share of all Certified Buildings</i>
A	0.26%
B	27.61%
C	71.56%
D	0.35%
E	0.09%
F	0.10%
G	0.00%

Experience from other countries show that the tepid interest in exceeding the minimal level is fairly typical when new performance requirements are introduced, and an additional push in promoting EE measures in buildings can significantly accelerate the process and ensure that the critical momentum is built. Such a push can come from promoting more attractive and tailored financing solutions for residential houses with improved EE characteristics.

As of 2012, the total volume of housing loans is valued at 86 billion Turkish Lira (TL) or over US\$40 billion and based on international comparisons, the housing loans to GDP ratio is still quite low, allowing for significant growth potential in this segment of the market.

#### **1.4 Barriers to Private Sector Investment in Green Buildings:**

Despite the considerable progress in Turkey with respect to improving EE in various sectors, there are still significant market barriers that limit private sector investments in EE in general and in residential green buildings sector in particular. These barriers include:

- Uncertainty of demand and high first mover costs for green buildings developers;
- Limited information for home buyers about savings potential and options, and skepticism about actual savings potential in utility costs;
- Lack of information about demand and economic benefits of green buildings for housing finance lenders and a lack of experience and track record of attractive returns on investments in green buildings;
- Newly introduced EPC system still not fully functional, while voluntary certification schemes are expensive and only cater to high-end construction.

Preliminary calculations, using IFC’s EDGE tool,<sup>3</sup> show that the energy savings of up to 27% (B level in the context of Turkey) over the minimally required C level can be achieved by implementing EE measures that increase construction costs by a mere 1%. The incremental investment cost for making buildings “greener” is, therefore, quite small and, in many cases, this additional cost does not seem to present a significant challenge for the developers, construction companies or financiers, but does appear to constitute a noticeable hurdle for the home buyers.

As a result, the interest in green buildings from potential home buyers remains quite limited, which in

<sup>3</sup> For more information on IFC EDGE program and tool see section 1.8 below.

turn suppresses supply of the residential green buildings and respective financing products: if home buyers are not interested in purchasing green homes then property developers have few incentives to build them. One of the ways the residential green buildings market can be stimulated is through providing a mortgage financing product, tailored specifically to green residential housing that will make the green alternative more attractive to home buyers.

Traditional mortgages seem to face difficulties in attracting customers to green buildings. For example, homebuyers typically do not think about the energy costs of a home when they are buying one. Moreover, there are few incentives for lenders and real estate brokers to go through the extra steps to explain to home buyers the benefits of EE upgrades. Home buyers also do not have sufficient information about their future energy consumption and are unable to properly evaluate their financial benefits from future energy savings. And finally, bearing the potential added cost at the time when the customer's finances are already stretched by the cost of an upfront down payment, further reduces home buyers' interest in "greener" buildings. Thus, incentivizing the end-consumer (the home buyers in this case), through a lending product with more favorable terms towards the purchase of residential green buildings – "green mortgage"<sup>4</sup> – could help reduce the additional upfront financial burden for home buyers and steer buyers' attention towards green homes.

IFC's CSEF II Program proposes to work through the financial sector intermediaries to develop, introduce, and scale up financial products, including green mortgages that would stimulate an uptake of green buildings market. Unlike a majority of other EE or RE initiatives that aim to support individual measures and technologies, the CSEF II Program will take a holistic approach that brings together proper structuring of financial products and better marketing with the objective to help raise awareness and attract home buyers to generate a first wave of home buyers of green buildings. It is expected that once the benefits of residential green buildings become better understood by home buyers, builders, and financiers, a long term sustainable market for green buildings will emerge in Turkey.

The timing of this program is critical. As the demand for housing in Turkey has surged in recent years (driven by growing urban migration and higher incomes among other factors), roughly 14 million housing units will be built or improved upon in the next few years. These circumstances provide IFC and CTF with a unique opportunity to bridge the initial gap in developing a sustainable market for green buildings.

### **1.5 Investment Services component:**

IFC's CSEF II Program will aim at addressing the barriers mentioned earlier and catalyzing an uptake and scale-up of SE projects in the green buildings sector. The Program will target both construction of new buildings and renovation of existing housing stock, and focus on helping FIs to promote green mortgage lines. Eligibility under the CSEF II Program will encompass a combination of EE measures and RE installations (such as solar hot water heaters, rooftop PV, heat pumps, etc.) united by the overall SE project design. The Program will seek to retain flexibility in terms of sub-project selection and structuring of the CTF funds. The following factors will guide IFC selection of the eligible clients:

- Eligibility criteria of the client's asset portfolio;
- Expected client's portfolio ramp-up period; and
- Expected number of transactions in the portfolio.

The CTF will support one or more (up to three) private sector FIs for on-lending to SE projects, end borrowers, and buyers of green houses. The final design of the financial instrument, pricing and terms

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<sup>4</sup> An energy-efficient or green mortgage allows the homebuyer to borrow extra money to afford the cost of the EE upgrades to an existing home or the incremental cost of purchasing a more expensive new home with better EE characteristics. The home's lower utility bills increase a borrower's available residual net income, allowing to sustainably servicing a loan, larger than otherwise possible, that would cover either higher price of the house or higher loan-to-value ratio.

will be tailored on a project by project basis to address the specific needs of each sub-project. IFC will ensure that the sub-projects only receive the minimum concessionality necessary to proceed.

Final agreement to provide CTF funding to any individual sub-project would be subject to a full due diligence and approval by an internal IFC approval body, as well as IFC Board. All sub-projects financed under the Program will be required to meet IFC environmental, social, governance and other compliance requirements, as well as all Turkish regulatory requirements. IFC's participation in the sub-projects will ensure the implementation of IFC Performance Standards as well as Environmental and Social guidelines early on in the project development cycle.

### **1.6 Advisory Services component:**

An advisory services component will aim to assist IFC clients in promoting green mortgages while also taking on a set of broader, market development activities. Specifically, the Program will:

- Provide advisory assistance to FIs in developing and marketing green mortgages to stimulate the supply of credit for green buildings;
- Assist the Turkish government in streamlining the EPC process for multi-family buildings. A more streamlined process will remove technical barriers and enable a more efficient way to certify energy performance of buildings in Turkey;
- Engage in an awareness-raising campaign targeted at construction companies to promote the development (i.e. supply) of green buildings and at homebuyers to stimulate the uptake (i.e. demand) of green buildings.

Advisory component will be fully funded from the funds remaining under the original CSEF program, approved by the TFC in September 2009, and will not require any additional funding from CTF. As indicated in the original CSEF program proposal, this work will aim to *strengthen the long-term impact of market transformation by solidifying local capacity, awareness and know-how.*

### **1.7 Program's strategy to achieve market transformation:**

IFC aims to continue motivating the transformation of SE lending practices in Turkey through promoting EE measures across various markets. Specifically, this Program will focus on various SE areas where market barriers are still high, with particular focus on developing the green buildings market and green buildings finance in Turkey. The market is ripe for significant improvements in EE of buildings – which consume a third of the energy used in Turkey. Key market drivers for a sustainable and large scale shift towards green buildings are in place: rising energy costs; new EE regulations and certification program; a rapid growth of housing stock and active refurbishing of existing buildings; need to comply with more demanding building codes; etc.

IFC's Program will directly contribute to removing the remaining market barriers by: (i) educating FIs about the opportunities and potential dynamics of the green buildings market segment and deploying new green buildings financial products, and (ii) providing financing that will include a concessional component and will allow to differentiate financing for green buildings from that for regular buildings. In addition, IFC would engage in market development work aimed at educating stakeholders (buyers of residential and commercial properties, construction companies, developers and related industry associations) about the lifetime returns on investments in green buildings. This will help create additional demand for more efficient housing and establish a track record for property buyers, developers, and FIs. It is expected that with rising experience and market penetration, the long-run benefits of green construction will be thoroughly understood in the market allowing market demand for such construction without extra incentives.

By focusing on FIs, IFC can achieve a transformational effect: incentives for home buyers will translate

into more demand for green construction, which will drive construction companies and developers to expand their related offering. The Program will directly leverage IFC's extensive experience in sustainable energy finance (SEF), various sub-sectors (SMEs, leasing, housing finance etc.), transactions with FIs, and green buildings and housing efficiency segments of the market.

The CSEF II Program will capitalize on and will become part of the global Excellence in Design for Greater Efficiency (EDGE) program recently developed by IFC to promote green buildings in emerging markets. EDGE program is a holistic engagement of the buildings ecosystem to promote green building construction. It is comprised of (i) advice to governments on regulatory reform; (ii) advice and investment for green developers; and (iii) advice and investment to help banks launch new green finance products. EDGE approach is supported by a low-cost, easy-to-use tool (referred to as EDGE tool)<sup>5</sup> that provides solutions at the early building design stage to reduce energy, water, and material consumption. Through a partnership with the World Green Building Council, IFC has launched a global certification program adapted to developing country needs which will encourage builders, buyers, and bankers to recognize the commercial viability of green buildings. IFC aims for 20% of new construction in 20 target markets and building segments to be EDGE certified within 7 years of launching the program. Turkey is one of these markets and, therefore, the CTF-supported CSEF II program dovetails well into IFC's approach to promote and grow a portfolio of investments in green buildings in the country.

## 2 FIT WITH INVESTMENT CRITERIA

### 2.1 *Potential GHG Emissions Savings:*

With one third of energy consumption in Turkey attributed to buildings, it is clear that green buildings (defined by IFC as buildings requiring at least 20% less energy than a typical similar building in the country) have enormous potential for GHG savings. Yet, given the lumpy nature of mortgage lending (conservative scenario), the immediate direct amounts that can be achieved by the proposed Program are rather modest.

Assuming:

- Grid emissions factor of 0.471 kgCO<sub>2</sub>/KWh;
- Co-financing leverage of about 13;
- Financing needed towards a single household of US\$46,875 (average mortgage size in Turkey);
- Total household energy consumption of about 1,025 kWh/month (IFC EDGE calculations);
- EE improvements of 27%; and
- Life of 30 years.<sup>6</sup>

The sub-projects under this Program are expected to directly generate GHG emission reductions of ~14,000 MtCO<sub>2</sub>e/year<sup>7</sup> for a representative year (0.471 kgCO<sub>2</sub>e/kWh x 1,025 kWh x 12 month x 27% x 8,960 households) or about 420,000 MtCO<sub>2</sub>e over the 30-year life.

<sup>5</sup> The EDGE tool has been developed by IFC for building construction companies and housing developers to identify options and technical solutions that reduce energy and water consumption in their projects. The EDGE tool is a customizable software tool that can be used to generate country-specific solutions and has a user-friendly interface, allowing for companies to use it without the need to hire green building specialists. IFC has been working on developing and improving the EDGE tool over a three-year span, and has successfully piloted the tool for projects in Mexico, Brazil, India, Bangladesh, and Costa Rica.

<sup>6</sup> The IFC GHG accounting methodology provides guidance on calculation of the GHG emission reduction on the basis of one representative year. To assess the amount of the lifetime GHG savings, a life of the asset is conservatively assumed to be around 30 years.

<sup>7</sup> MtCO<sub>2</sub>e stands for Metric ton of CO<sub>2</sub> equivalent.

The IFC experience with promoting various new types of financing instruments through FIs, including its track record in Turkey, indicates that the replication effect can be quite substantial. Thus, the use by IFC of the CTF funds to stimulate the advancement of the leasing business model in EE sector in Turkey (CSEF Program) has triggered a significant uptake. For example, the CTF loan of US\$5 million to YapiKredi Leasing company (blended with \$US20 million from IFC) has contributed to a company's growth and expansion of the leasing segment of its business to over US\$500 million over the last few years. Assuming similar market reaction, with a replication effect of at least about 20x (which will be achieved by adopting EE improvements in about 180,000 residential units), the Program may result in additional indirect reduction of about 8,400,000 MtCO<sub>2</sub>e or more over the 30-year period.

## **2.2 Cost-Effectiveness:**

Based on the above calculations and an expected Program cost of US\$30 million, the implied cost-effectiveness of the CTF funds is estimated at 71 \$/MtCO<sub>2</sub>e (or 0.014 MtCO<sub>2</sub>e/\$) over the life of the sub-projects and, accounting for the indirect GHG emission reductions – 3.5 \$/MtCO<sub>2</sub>e (or 0.3 MtCO<sub>2</sub>e/\$). The total investment cost per direct life-time GHG emission reductions is expected to be around 1,000 \$/MtCO<sub>2</sub>e.

## **2.3 Demonstration Potential at Scale:**

The Turkish housing market demand is fueled by a combination of population growth, ongoing migration, increasing urbanization, and growth in disposable income. The combination of these factors has led to the growth of housing demand and sales at an average rate of 15%/year over the last 8 years, reaching 18%/year in 2011. Current demand estimates indicate up to 6.5 million new units required to be built by 2023. In addition, under the “National Urban Transformation Initiative”, about 7.5 million of existing buildings will be replaced or refurbished, as they are of poor quality or not up to the code for earthquake resistance. So far, the share of buildings with high EE levels (A or B) has been relatively low (27.8%). Even if the share is maintained at the current level and all the new buildings undergo the certification, the market for such green construction will likely reach billions of US\$ a year. Considering the lifetime economic benefits of more efficient construction in an environment of high and rising energy costs, it is expected that the share of efficient construction will further grow over time.

## **2.4 Development Impact / Co-benefits:**

The expected co-benefits to be achieved by the Program include:

- Better quality housing – higher quality of life, long-term value of the housing;
- Greater awareness of the population of the need and benefits of the EE measures;
- Improved access to finance; broadening and deepening financial markets;
- Creating domestic demand for EE components, stimulating domestic manufacturing and creating domestic jobs;
- Alleviating the energy imports burden, improving the current account deficit.

## **2.5 Implementation Potential:**

The Turkish housing market demand is fueled by a combination of population growth, ongoing migration, increasing urbanization, and growth in disposable income; with demand and sales growing at a rate of 15% p.a. since 2005 and increasing to ~18% in 2011. Current demand estimates indicate up to ~6.5 million new units required to be built until 2023. In addition to new construction, a significant proportion



of existing building stock which is of poor quality or not up to code for earthquake resistance will also be replaced or refurbished under the “National Urban Transformation Initiative”. The fraction of this market that is expected to be green construction (defined as EPC levels A and B) is expected to be at least \$430m/year. This CTF Program would allow making the first, pilot investments on this market segment, opening up significant growth potential.

#### **2.6 Additional Costs & Risk Premium:**

None

#### **2.7 Financial Sustainability:**

Green buildings at 20% more efficient than baseline in most cases pay for themselves in terms of lower operating expenses. In country like Turkey, where typical utility represents around 10% of the household’s monthly expenditures, reduction in energy consumption by 20% can lead to lowering of monthly household expenditures by about 2%.

The concessional elements of the Program are intended to help FIs enter this new market segment. The successful piloting of this Program will lead to the increased awareness of Turkey population about the need and the benefits of buildings with EE features. At the same time, once a lending track record is established and the market proven, the FI’s comfort level with providing financial products targeted to EE buildings will significantly increase. It is expected that in this win-win situation and with the benefits of lowering household expenditure, the market will pick up and fully commercial financing for green buildings will follow.

#### **2.8 Mitigation of Market Distortions:**

The concessional finance is targeted specifically at addressing the first-mover costs for FIs who enter this new, as yet un-proven market of green buildings finance in Turkey. This is a market that as yet is not supplied by commercial banks in Turkey so initial market distortions are not foreseen. Over time, as the market is proven it is expected that additional banks will enter this market, even without concessional finance.

#### **2.9 Effective Utilization of Concessional Finance:**

Concessional funding will:

- Generate energy savings and GHG emissions avoidance from new, sizable segment of the market;
- Allow several FIs to enter in currently underserved segments of the EE market;
- Mobilize and leverage private sector funds towards green buildings/green mortgages in Turkey, stimulating the green buildings and broader EE sector Turkey attracting follow-up investments;
- Set a precedent of a series of successful projects, establishing a foundation for the sector transformation;
- Benefit from and contribute to a broader success of the IFC EDGE platform.

#### **2.10 Risks:**

Potential risks associated with the Program include:

- Lack of uptake from banks: IFC has been closely monitoring market conditions in Turkey and has seen an initial interest in related market segments;

- Lack of uptake form home buyers: The market fundamentals in Turkey are clearly in place to drive higher demand for green buildings, e.g. rising utility costs, energy performance certificate requirement etc. While this has not yet translated explicitly into demand for green buildings, it is expected that the introduction of green mortgages coupled with targeted information campaigns through IFC advisory services will quickly lead resolve this;
- Potential housing market bubble: While certain parts of the Turkish real estate market have been exhibiting signs of overheating, this appears mostly to affect commercial real estate developments. The basic fundamentals of a rapidly growing population, coupled with continuing urbanization, are expected to continue to drive construction, and the high and growing costs of energy are expected to particularly drive the market towards more efficient buildings.

### 3 PERFORMANCE INDICATORS

The performance indicators outlined below are derived from the CTF Results Measurement Framework. These indicators will be tracked at least annually. Suggested performance indicators for the project include:

Indicator	Current Baseline	Anticipated Impact
<b>DIRECT IMPACTS:</b>		
MWh of electricity saved	0 MWh per annum	30,000 MWh per annum, for a representative year; 900,000 MWh over the life
GHG emissions avoided	0 MtCO <sub>2</sub> e per annum	14,000 MtCO <sub>2</sub> e per annum, for a representative year; 420,000 MtCO <sub>2</sub> e over the life
Incremental financing leveraged (of all, non-CTF parties)	US\$0	US\$390 million for the entire Program
Jobs created	N/A	N/A