CTF -DPSP (IV-GESP)

PROJECT TITLE: ACCELERATING THE MARKET TRANSITION FOR DISTRIBUTED ENERGY (P176375)
COUNTRY: TURKIYE
MDB: IBRD

Cover Page for CTF Project/Program Approval Request[a] Global Energy Storage Program (GESP / DPSP-IV)			
Country/Region	Turkiye	**CIF Project ID#**	**Auto Generated by CCH**
Type of CIF Investment:	☒ Public ☐ Private		
Project/Program Title (same as in CCH)	Accelerating the Market Transition for Distributed Energy		
Sector/Pillar	☐ Enabling Environment ☐ Energy Efficiency ☒ Energy Storage ☒ Renewable Energy ☐ Renewable Energy/ Energy Efficiency ☐ Transport		
Technology/Area	☐ End Use ☐ District Heating ☐ Smart Grid ☐ Capacity Building ☐ Multiple ☒ Batteries ☐ Hydro ☐ Green Hydrogen ☐ Geothermal ☐ Wind ☐ Solar ☐Hydropower ☐ Cookstoves ☐ Waste to Energy ☐ Bioenergy ☐ Mixed RE ☐ Green Fuels ☐ Modal Shift ☐ Vehicle Technologies ☐ Mass Transit ☐Electric Vehicles ☐ Other (_____)		
Project Lifetime (MDB board approval to project closure)	**5 years: 2024 – 2029 through PforR program**		
Is this a private sector program composed of sub-projects?	☐ Yes ☒ No		

Financial Products, Terms and Amounts (same as CCH)		
Financial Product	**USD** (million)	**EUR** (million)[b]
Grant	0	
MPIS	0.35	
Public sector loan – Senior loan	30.00	
First loss guarantee		
Second loss guarantee		
Equity		
Senior loan		
Senior loan in local currency hedged		
Senior loan in local currency unhedged **(EXCEPTIONAL REQUEST)**		
Subordinated debt/loan/ mezzanine instrument with income participation		
Subordinated debt/loan / mezzanine instrument with income participation local currency unhedged **(EXCEPTIONAL REQUEST)**		
Subordinated debt/loan /mezzanine instrument with convertible features		
'Convertible/contingent recovery' grant/loan/guarantee (loans convertible to grants or vice versa)		
Convertible Loans (convertible to equity only)		

For loans and guarantees – is this a revolving structure? [1] ☐ Yes ☐ No		
Specify local currency type here		
Other (please specify)		
Total	30.35	

CIF Financial Terms and Conditions Policy	Link Is this request in accordance with the CIF Financial Terms and Conditions Policy? ☒Yes ☐No (if no, please specify detailed information under the justification section)
Justification (exceptional request)	

Implementing MDB(s)	IBRD
MDB Headquarters-Focal Point:	Chandrasekar Govindarajalu cgovindarajalu@worldbank.org
MDB Task Team Leader (TTL)	Arnaud Braud abraud@worldbank.org Alan David Lee adlee@worldbank.org
National Implementing Agency:	**TURKIYE SINAI KALKINMA BANKASI A.S. (TSKB)**
Country Focal Point/s	Meral Murathan Executive VP (902123345124) murathanm@tskb.com.tr
Brief Description of Project/Program (including objectives and expected outcomes) [c]	

1 With a revolving structure, after the loan or guarantee matures, instead of returning the funds to the Trustee, the funds are redeployed as a new loan or guarantee.

The Project Development Objective is to expand Türkiye's distributed solar photovoltaic market and pilot distributed battery electricity storage. Accelerating the transition to a fully fledge commercial market for DER and distributed BESS will require a phased approach, characterized by strong public support in the early days, underpinned by a scalable financing mechanism.

In the first phase, the Program will engage with Türkiye's two leading development banks as Program Borrowers (PBs), leveraging their technical and fiduciary experience to have a demonstrative effect and provide dedicated financing for DER and distributed BESS. In a second phase, the PBs will establish a facility to lend to commercial banks and other financing entities (Facility Borrowers [FBs]), who will access funds on-lent by the PBs; the PBs would transfer their technical and financial knowledge acquired on DER and BESS to the FBs, thereby enlarging the financial market for DER and BESS. In subsequent phases, public support is expected to decrease substantially, leaving more and more space to commercial financing until the market achieves full maturity. In the first phase, there is a strong development rationale for the GoT to select the privately-owned Industrial Development Bank of Türkiye (Türkiye Sinai Kalkinma Bankasi, TSKB) and the state-owned Development and Investment Bank of Türkiye (Türkiye Kalkinma ve Yatirim Bankasi, TKYB) as implementing entities to scale up the DER and BESS market. During the second phase, commercial banks will lend to DSPV and BESS customers, thereby helping the financing market to grow and transition to fully commercial financing.

The proposed Program-for-Results (PforR) has been requested by the GoT as an important program to channel climate financing and help achieve the solar PV capacity target of 52.9 GW by 2035 set in the NEP, contributing to Türkiye's carbon neutrality. Large-scale deployment of DSPV generation, as well as BESS, have the potential to transform and further modernize Türkiye's electricity sector in the medium term. Both technologies are expected to play a significant role in Türkiye's economic development, as they can reduce the overall cost of generating, transmitting, and distributing electricity while fostering economic growth and improved environmental sustainability.

This is the first PforR in Türkiye. The PforR was deemed most suitable to address the GoT's request and support its ambitious target for scaling up renewables and it can address the policy and regulatory barriers, as well as institutional strengthening, together with investments.

The proposed PforR will focus on unlocking private sector investments and innovation in DSPV and BESS, thereby contributing to the achievement of the GoT's solar PV and BESS targets.

Specifically, the proposed Program will focus on two results areas:

(a) **Results Area 1** - Scaling-up distributed solar PV. Investments will support the installation of grid-connected distributed solar PV systems. The DSPV systems could include rooftop solar photovoltaic (RSPV) and ground-mounted solar PV, as well as newer technologies such as façade PVs and floating PV. The systems installed will be primarily for self-consumption, eligible for net metering and connected to the distribution grid. This results area targets the C&I market segments, which are essential to create the broader market ecosystem for DSPV. The eligible sub-borrowers include DSPV customers, DISCOs, leasing companies, and aggregators who own, operate, and maintain the DSPV systems for customers to supply electricity to C&I buildings.

(b) **Results Area 2** - Expanding the market and promoting innovation for distributed energy, including BESS. This will help unlock commercial financing at scale for DSPV and support innovation for BESS. Under this results area: (i) the two Program Implementing Agencies (PIA) will set up a facility to finance commercial banks selected transparently and competitively; and (ii) these commercial banks will finance DSPV projects, including through their own financing. A recipient-executed grant of US$3 million from the Energy Sector Management Assistance Program (ESMAP) will be disbursed against the DLI for establishment of the facility. Separately, a Clean Technology Fund (CTF) US$30 million

credit will support BESS investments financed by the PIAs, having an important demonstrational effect for the market and the broader banking industry. Eligible sub-borrowers for battery storage include renewable developers, battery storage companies, aggregators, and DSPV consumers.

The CTF funding plays an important role in encouraging early adoption of DSPV and BESS and demonstrating to market players that it is a viable investment. TSKB and TKYB are interested in participating in the Program since it offers a relatively low-risk entry into an area with significant potential for growth in the future. Their participation in stage 1, and the creation of a facility for on-lending through new stakeholders such as commercial banks in stage 2, lends sustainability, continuity, and follow-up to the program after the IBRD resources are exhausted. The PIAs will be transparent in communicating the limited timing of the availability of concessional loans.

Program DLIs

DLIs	Description of DLIs	Disbursement Amount (US$, millions)
Results Area 1: Scaling up distributed solar PV (DSPV)		
DLI 1.1: TSKB sub-loans for DSPV (US$, million)	Sub-loans from PIAs to sub-project borrowers for DSPV. The end-of-program target of this DLI is US$269.0 million for each PIA.	145.0 (IBRD)
DLI-1.2: TKYB sub-loans for DSPV (US$, million)		145.0 (IBRD)
DLI-2.1: Generation capacity under TSKB sub-loans (MW)	Generation capacity from DSPV sub-projects financed with PIA sub-loans. Given the potential large number of solar PV units installed, the verification of this DLI will be on a sampling basis, in each market segment. The end-of-program target of this DLI is 317 MW for each PIA.	56.25 (IBRD)
DLI-2.2: Generation capacity under TKYB sub-loans (MW)		56.25 (IBRD)
Results Area 2: Expanding the market and promoting innovation for distributed energy		
DLI-3: DSPV on-lending facility in place (Text)	Establishment of a transparent and inclusive facility by the PIAs (TSKB and TKYB) through which they finance Facility Borrowers (FBs) to on-lend to sub-project borrowers for DSPV investments. Four DLRs capture incremental progress for establishing the facility.	22.5 (IBRD) 3.0 (ESMAP)
DLI-4.1: Facility sub-loans by TSKB (US$, million)	Facility sub-loans disbursed to sub-project borrowers to finance DSPV. The end-of-program target of this DLI is US$109.0 million for each PFI.	65.0 (IBRD)
DLI-4.2: Facility sub-loans by TKYB (US$, million)		65.0 (IBRD)
DLI-5.1: Generation capacity under facility sub-loans by TSKB (MW)	Sub-loans disbursed to sub-borrowers to finance DSPV investments. The end-of-program target of this DLI is 122 MW for each PIA.	22.5 (IBRD)
DLI-5.2: Generation capacity under facility sub-loans by TKYB (MW)		22.5 (IBRD)
DLI-6.1: TSKB sub-loans for BESS [CTF] (US$, million)	Sub-loans disbursed to sub-borrowers to finance BESS investments. The end-of-program target of this DLI is US$15 million for each PIA.	10.0 (CTF)
DLI-6.2: TKYB sub-loans for BESS [CTF] (US$, million)		10.0 (CTF)
DLI-7.1: BESS capacity under TSKB sub-loans (MWh)	Installed BESS capacity (MWh) financed in subprojects. Eligible types of battery storage include generation, transmission, distribution grids, and consumers. The end-of-program target of this DLI is 32.0 MWh for each PIA.	5.0 (CTF)
DLI-7.2: BESS capacity under TKYB sub-loans (MWh)		5.0 (CTF)

Consistency with CTF investment criteria

a. Potential GHG emissions savings	0.71 million tons CO_2 per year (for all components) 0.1 million tons CO_2 (CTF funded component) 14.2 million tons CO2 Over project lifetime (for all components) 0.21 million tons CO2 over project lifetime (CTF funded component)
b. Cost-effectiveness	The cost-effectiveness of the Program for CTF funding is US$2.1/tCO2eq and US$65.6/tCO2eq for the total funding.
c. Demonstration potential at scale	The proposed PforR program provides financing targeted toward growing the DSPV market in C&I market segments and also to grow untapped markets, especially for BESS. In stage 1, TSKB and TKYB will provide direct lending to their customers. In stage 2, they will on-lend, via a facility, to Facility Borrowers (FBs, mostly commercial banks) in order to enlarge and raise capacity throughout the financing market for such investments. As a result of these activities, the ecosystem will be in place to scale up deployment of DSPV and BESS well beyond the lifetime of the Program. **The proposed PforR Program has great transformational potential as it will contribute to large-scale deployment of DSPV systems throughout Türkiye and across all consumer segments. TSKB and TKYB's loans will help develop and expand this market and crowd in commercial financing.** The World Bank financing will help support early movers in piloting innovative business models and approaching untapped market segments to demonstrate the viability of these investments. BESS remains a relatively new technology, and investments in BESS in Türkiye have yet to be tested and business models adapted to its specific characteristics.

d. Development impact	The proposed Program targeting DSPV and BESS will support Türkiye's energy security and accelerate the overall decarbonization rate by leveraging important private sector resources. **Local employment opportunities** : Scaling up the DSPV market is expected to create opportunities for employment as the Program supports a wide array of business models. This is expected to include the growth of business for not only aggregators, developers, and vendors but also for contractors for the installation, operation, and maintenance of the systems. The local manufacturing sector for panels and other equipment for DSPV systems will also benefit greatly from the expansion of the market and require addition and training of new personnel. **Environmental co-benefits :** As Türkiye's energy demand grows rapidly to fuel its economic growth, the country relies heavily on imports of gas and oil to fuel this demand. This project will have significant environmental benefits while contributing to Türkiye's agenda to further increase the share of RE in generation. By displacing CCGT, DSPV is expected to save an equivalent of 410 g/MWh in NOx, 3 g/MWh in SO2, and 3 g/MWh of PM2.5.

e. Implementation potential	There is a strong development rationale for the GoT in selecting TSKB and TKYB as PIAs to scale up the DSPV market. TSKB and TKYB are Türkiye's leading development banks. As Türkiye's private and public development banks, TSKB and TKYB focus their activities on identified market gaps for nascent markets. Both institutions explicitly align their activities to the SDGs and climate change. TSKB is also the market leader in green finance, providing a demonstration effect for the whole industry in the country, having the best ESG score among the Turkish banks (and good scores globally). TKYB's sustainability projects account for 81 percent of its loan portfolio. In 2021, TKYB became the first and only bank in Türkiye that signed Operating Principles for Impact Management led by IFC. TKYB published its first Impact Report in 2021. The same year, it mediated the issuance of Türkiye's first Low Carbon Economy Transition Bond and Türkiye's first social sukuk. TKYB has the second best ESG score among Turkish banks, just after TSKB. Despite their small size, providing less than 2 percent of total banking sector loans, their value creation and impact generation is above the sector. For instance, together, the two institutions have financed 22 percent of the country's total RE capacity (TSKB 15 percent and TKYB 7.5 percent). The CTF and IBRD funding plays an important role in encouraging early adoption of DSPV and BESS and demonstrating to market players that it is a viable investment. TSKB and TKYB are interested in participating in the Program since it offers a relatively low-risk entry into an area with significant potential for growth in the future. Their participation in stage 1, and the creation of a facility for on-lending through new stakeholders such as commercial banks in stage 2, lends sustainability, continuity, and follow-up to the program after the IBRD resources are exhausted. The PIAs will be transparent in communicating the limited timing of the availability of concessional loans.

f. Additional costs and risk premium	CTF's concessional financing under the Program is critical to address key barriers hindering the expansion of the DSPV market and innovative technology solutions like BESS in Türkiye. The concessional loan along with IBRD funding will help create the regulatory and institutional framework required and demonstrate new business models to allow for the scale-up of battery storage investments. In turn, this will further reinforce the business case for investment in DSPV systems. Battery storage is a nascent market in which local stakeholders lack experience, and this program will allow for piloting of various uses for storage under concessional terms that will allow for more rapid uptake. Without the concessional funding, TSKB and TKYB would be limited by their lack of experience, transaction cost, and strong risk perception and would not be able to engage in this market at this scale and would not have considered investment in the untapped markets or new technologies like BESS which are targeted by this program. The limited growth in the deployment of BESS would also limit the diversity in the use of DSPV and the role it could play in facilitating the integration of renewables relative to its potential in the market.
Additional CTF investment criteria for private sector projects/ programs	
g. Financial sustainability	It is a public sector project
h. Effective utilization of concessional finance (including a detailed analysis on how the proposal meets the minimum concessionality principles, and on how it is aligned with the blended concessional finance principles)	It is a public sector project
i. Mitigation of market distortions	It is a public sector project
j. Risks	It is a public sector project
For DPSP projects/programs in non-CTF countries, explain consistency with FIP, PPCR, or SREP Investment Criteria and/or national energy policy and strategy.	
Turkey is a CIF eligible country.	
Social Inclusion and Stakeholder Engagement	

Internal and external stakeholder engagement and consultations took place throughout the Environmental and Social Systems Assessment (ESSA) preparation process. The Program will build on the experience of other similar World Bank-financed projects and use other relevant measures such as the POM to mainstream environmentally and socially friendly practices in the Program.	
Gender Considerations	
Gender Analysis (Please insert the text from the project document on the analysis of gaps in access to services, markets, and jobs by women in relation to the project sectors)	Social norms play an important role in influencing men's and women's attitudes toward WFI in Türkiye and in understanding some of the barriers faced. For example, there is a sense among men and women alike in some segments of society that women should not have financial independence, as defined by holding individual accounts in their own names. Furthermore, female entrepreneurs and already established women's businesses in Türkiye also face significant financial obstacles. In an OECD entrepreneurship report on Türkiye, many more women than men said that access to finance represented a barrier to starting a business. Indeed, it is estimated that women-led SMEs in Türkiye face a US$400 million financing gap. These statistics are concerning not just for the women business owners themselves but for the country, which could benefit from the economic value that thriving, non-financially constrained businesses can offer. Additionally, in Türkiye, collateral is required more often for women-led businesses than for businesses managed by a man. About 58 percent of loans to businesses led by women require collateral whereas only 38 percent of loans to businesses managed by men require collateral.
Gender Activities (Please insert the text describing gender-specific activities included in the project)	In response to the gender-based disparities in economic opportunities and access to finance, the Program will: **(i)** survey a sample of existing and/or prospective client firms (DSPV developers and/or financiers) that have representative characteristics of Program participants, in order to ascertain the share that are gender-inclusive (based on qualifying criteria detailed below); **(ii)** target gender-inclusive firms for prospective Stage 1 sub-borrowers and Stage 2 facility borrowers in outreach campaigns and activities to raise awareness about financing options for DSPV investments; **(iii)** survey each DPSV sub-borrower and facility-borrower to assess whether they qualify as gender-inclusive, around the time of signing any loan agreement and each year after that until program closure; and (iv) include training on gender-inclusion in capacity building activities for facility borrowers, with a curriculum to be detailed in the Facility Operation Manual.

Gender Indicators (Please insert the text on selected gender specific indicators, including annual targets. from the Project Log Frame that the project is committing to report on)	To measure progress on the impact of these measures, the proposed indicator is 'Share of sub-loans and facility-loans made from PIAs to women-inclusive firms for DSPV (percent)', with a baseline value of zero; interim target value and end target value of [30]% by Program closing.[1] This indicator will be calculated by dividing the number of agreements made with gender-inclusive sub-borrowers and facility-borrowers by the total number of sub-loan and facility-loan agreements made by the PIAs. The PIAs will identify which firms qualify as gender-inclusive based on surveys. To qualify, a firm must meet at least one of the following criteria, either: (i) the firm has in place a gender inclusion policy and/or action plan; or (ii) at least one C-level manager is a woman; or (iii) at least 25 percent of mid-level managers are women; or (iv) the share of women employees among total employees has increased by at least 5 percent compared to the share three years earlier. Details to implement the above will be elaborated in the Program Operation Manuals.

For projects/programs with activities in countries assessed as being at moderate or high risk of debt distress, macro-economic analysis to evaluate the potential for the CTF project or program to impact the country's debt sustainability

Key macroeconomic risks to the project include (a) any further significant depreciation of the currency and high inflation could raise the construction cost and foreign exchange risk faced by project developers; (b) supply-side constraints due to a spike in imported intermediate goods and equipment price and as a result of the elevated pricing uncertainty could lead to delays in project implementation; and (c) further currency depreciation could affect foreign exchange risks of utilities of metropolitan municipalities putting pressure on their budget and lead to debt service problems. The ongoing war in Ukraine and other geopolitical tension in the region have adversely affected commodity and energy prices and caused a slowdown in the EU and other major markets. The World Bank will also continue to monitor macro-financial risk, engage with the authorities on economic policies, and offer technical assistance as requested by the Government.

For public sector projects/programs, analysis of how the project/program facilitates private sector investment

The operation is aligned with Maximizing Finance for Development approach. The government is actively seeking to crowd-in private sector investments in the DER sector. Private capital mobilization (PCM) is expected to be around US$ 240 million. When including co-financing from both PIAs, and FBs, other private debt, and equity from beneficiaries, average mobilization of private capital across subprojects would be around 50 percent, meaning that each dollar of IBRD funding would leverage US$0.50 of private funding.

The total investment into the proposed program would be funded through CTF (US$30 million loan), IBRD (US$600 million), ESMAP (US$3 million grant), TSKB (US$57 million), TKYB (US$57 million) and other private lenders (US$44 million) co-financing and private equity (US$104.5 million). The CTF leverage ratio will be 1 to 30. With an addressable market potential of 4.5–8 GW, the program will set an enabling environment for further private sector investment in the expansion of DSPV and BESS toward fully achieving the GoT's target of 52.9 GW of solar capacity and 7.5 GW of BESS by 2035.

Expected Results (M&R)

[1] The proposed target value [30%] is subject to discussion and negotiation with TSKB and TKYB. The action plan described includes a proposed survey of existing clients to help establish a baseline early during implementation.

Project/Program Timeline	
Expected start date of implementation[d]	2024
Expected end date of implementation[d]	2029
Expected lifetime of project results in years (including beyond project closure)	5 years - This PfoR is for 5 years with a total lifetime of 20 years
CTF Core Indicators	**Project-Defined Indicators/Targets**
Please list the corresponding project-defined indicator(s) and report all targets, including disaggregated targets. (See the GESP Program Monitoring and Reporting Toolkit for additional guidance.)	
CTF 1: GHG emissions reduced or avoided (mt CO_2 eq)	Tons of GHG emissions avoided
Annual	0.71 million tons CO_2
Cumulative Lifetime	14.2 million tons CO_2
CTF 2: Volume of direct financing leveraged through CTF funding ($)	*Indicator calculated from the co-financing section below*
CTF 3: Installed capacity of RE as a result of CTF interventions (MW)	
Wind	
Solar	32 MW (BESS, CTF funded)
Hydro	
Geothermal	
Other/Mixed	
TOTAL	878 MW (BESS+DSPV)
GESP-Specific Indicators	**Project-Defined Indicators/Targets**
GESP 1: Energy rating of storage systems installed (MWh)	64 (MWh)
Please specify storage technology type (i.e., thermal, mechanical, electrochemical, etc.):	Electrochemical
Please specify location on the energy value chain (i.e., generation, transmission, distribution, stationary end use, mobile end use):	Distribution
Please specify if distributed storage or utility scale:	distributed storage
GESP 2: Power rating of storage systems installed (MW)	TBD
GESP 3: Policies, regulations, codes, or standards adopted for energy storage solutions (number)	2
Please specify if policy, regulation, code, or standard:	Regulations
GESP Co-Benefit Indicators	**Project-Defined Indicators/Targets**
Please identify one or more expected co-benefit indicators–i.e., other social, economic, environmental benefits beyond the CTF and GESP core indicators–that the project will track and report.	

GESP Co-Benefit *(e.g., Gender, employment, energy access, social inclusion, health and safety, competitiveness and industrial development, SDGs):*	▪ Increased share of renewable energy in overall generation mix ▪ Increased opportunities of local employment ▪ Reduction of distribution losses due to co-location of generation and consumption ▪ Contribution to cost reduction in solar PV technologies and further development of local equipment production market Environmental co-benefit: 410 g/MWh of nitrogen oxides, 3 g/MWh of sulfur oxides, and 3 g/MWh of PM2.5 to be reduced annually after the installation of target capacity.

Please also submit the full project results framework to the CIF Secretariat upon MDB Board approval of the project for consideration of project-specific indicators to track.

Co-financing

	Please specify as appropriate	**Amount (million USD)**
MDB 1	IBRD	600.00
MDB 2 (if any)		
Government		
Private Sector	Commercial financing	297.00
Bilateral	ESMAP	3.00
Others (please specify)		
Total Co-financing		**900.00**
CIF Funding		**30.00**
Total Financing (Co-financing + CIF Funding)		**930.00**
Proportion of Total Financing for Adaptation		
Proportion of Total Financing for Mitigation [e]		**930.00**
Expected Date of MDB Approval	**January 30, 2024**	

NOTES:

[a] This cover page is to be completed and submitted together with the MDB project/program proposal when requesting CTF funding approval by the Trust Fund Committee.

[b] For products denominated in EUR, please also provide USD equivalent in the column to the left

[c] Please provide the information in the cover page or indicate page/section numbers in the accompanying project/program proposal where such information can be found.

[d] Insert “not applicable” (N/A) if dates cannot be determined at the time of submission (e.g. private sector programs)

[e] Per MDBs’ own Paris alignment climate finance tracking methodologies

Version: October 2023

CCH – here

CIF Website – here

CIF Pipeline Management and Cancellation Policy - here

CIF Financial Terms and Conditions Policy updated for FY24 - here

GESP Program Monitoring and Reporting Toolkit – here

CTF M&R Toolkit – here