



**ASIAN INFRASTRUCTURE
INVESTMENT BANK**

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**Project Change Document
of the Asian Infrastructure Investment Bank**

Sovereign-backed Financing

**Republic of Turkey:
TKYB Renewable Energy and Energy Efficiency On-Lending Facility**

Currency Equivalents
(As at date, Sep. 21, 2021)

Currency Unit – Turkish Lira (TRY)
TRY1.00 = USD0.12
USD1.00 = TRY8.67

Borrower's Fiscal year
Jan. 1-Dec. 31

Abbreviations

AIIB	Asian Infrastructure Investment Bank
BRSA	Banking Regulation and Supervision Authority
CO ₂	Carbon Dioxide
ES	Environmental and Social
ESMS	Environmental and Social Management System
EU	European Union
EUR	Euro
GDP	Gross Domestic Product
GW	Gigawatt
GWh	Gigawatt per hour
IBRD	International Bank for Reconstruction and Development
IEA	International Energy Agency
IFI	International Financial Institution
kW	Kilowatt
kWh	Kilowatt per hour
MW	Megawatt
MWh	Megawatt per hour
NSBL	Non-sovereign backed Loan
SBL	Sovereign-backed Loan
tCO ₂ eq	Tons of carbon dioxide equivalent
TKYB	Turkiye Kalkınma ve Yatırım Bankası (Development and Investment Bank of Turkey)
TRY	Turkish Lira
USD	United States Dollar
YEKDEM	Yenilenebilir Enerji Kaynakları Destekleme Mekanizması (Renewable Energy Support Scheme)

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1. Summary Sheet

Project No.	000141
Project Name	TKYB Renewable Energy and Energy Efficiency On-Lending Facility
AIIB Member	Republic of Turkey
Borrower	Türkiye Kalkınma ve Yatırım Bankası (Development and Investment Bank of Turkey or TKYB)
Guarantor	Republic of Turkey
Project Implementation Entity	TKYB
Sector	Finance
Sub-sector	Financial intermediary
Project Objective	To advance Turkey's renewable energy and energy efficiency infrastructure.
Project Description	The Project will provide long-term financing (sub-loans) through TKYB to privately-owned companies in Turkey to invest in projects (sub-projects) in the renewable energy and energy efficiency sectors. These include sub-projects in the wind, solar, geothermal, and biomass industries.
Implementation Period	Start date: November 2019 End date: November 2023
Loan Closing Date	March 2024
Cost and Financing Plan	Original Loan: USD 200 million Additional Loan: USD 100 million
Size and Terms of AIIB Loan	The Additional Loan will fall within the Original Loan's tenor of 15 years, including a grace period of three years, with level repayments. The Additional Loan will follow AIIB's standard interest rate for sovereign-backed loans (<i>variable spread</i>).
ES Category	FI
Risk (Low/Medium/High)	Medium
Conditions of Effectiveness <i>Effective since January 14, 2020</i>	<ul style="list-style-type: none"> • Legal opinion on the Additional Loan agreement. • Adoption of the revised operations manual.
Key Covenants	<ul style="list-style-type: none"> • Compliance with applicable prudential regulations of the Republic of Turkey and the Banking Regulation and Supervision Authority (BRSA).
Conditions for Disbursement	<ul style="list-style-type: none"> • Receipt of evidence, in form and substance satisfactory to AIIB, that at least 80 percent of the proceeds of the immediately preceding withdrawal by the Borrower have been disbursed (except for the first withdrawal), and that 100 percent of the proceeds of all other earlier withdrawals by the Borrower have been disbursed to the eligible Sub-borrowers.
Retroactive Financing	<ul style="list-style-type: none"> • Original loan: not applicable (not utilized). • Additional loan: Up to USD 20 million, in line with the limits established in the AIIB Directive on Sovereign and Non-sovereign-backed financings (April 28, 2020).
Policy assurance	VPPS – I confirm that policy assurance is given to this project

President	Jin Liqun
Vice President	Konstantin Limitovsky
Director General	Supee Teravaninthorn
Manager	Gregory Liu
Team Leader	Francisco Fortuny, Senior Investment Operations Specialist
Team Members	Chee Wee Tan, Senior Environmental and Social Specialist (Private Sector) Evren Dilekli, Consultant Giacomo Ottolini, Procurement Consultant Komron Rajabiyon, Associate Liu Yang, Legal Counsel Merve Birgul, Social Development Specialist Rabindra Shah, Procurement Associate Shonell Robinson, Financial Management Specialist

2. Project Background

A. Implementation Status

1. On November 12, 2019, the AIIB Board of Directors approved the Project TKYB Renewable Energy and Energy Efficiency On-Lending Facility (000141), a USD200 million sovereign-backed financing (the Loan) to Türkiye Kalkınma ve Yatırım Bankası (TKYB or the Borrower) to advance Turkey's renewable energy and energy efficiency infrastructure.

2. The Loan was signed on Dec. 10, 2019 and declared effective on Jan. 14, 2020. As of Oct. 28, 2021, the Loan is 100 percent disbursed (i.e., USD200 million), long before the loan closing (i.e., March 31, 2024). See **Table 1** for more details.

Table 1. Project Utilizations*

Disbursement	Amount, USD	Disbursement date
1st Utilization	50,000,000.00	8 September 2020
2nd Utilization	50,000,000.00	23 December 2020
3rd Utilization	50,000,000.00	2 June 2021
4th Utilization	50,000,000.00	24 September 2021
Total disbursed amount	200,000,000.00	

3. The proceeds from the Loan are used to support investments by privately-owned companies in renewable generation plants (wind and biomass). Under the current limit and subject to the Bank's non-objection, the Loan is expected to support a portfolio of up to ten sub-projects,¹ representing 474MW of installed capacity, as presented in **Annex 2**. The total cost of the sub-project portfolio is USD615.8 million (average cost: USD1.29/MW). Five sub-projects (131.2MW) have been completed as of July 31, 2021.

4. The sub-projects are financed with TKYB loans backed by AIIB and other IFIs, export-credit agencies/commercial debt, and sponsors' equity, thereby contributing to mobilize private capital.² See **Annex 2**.

5. Once fully commissioned, the currently identified sub-projects portfolio is expected to produce 1,260GWh of electricity and displace an estimated 728,573 tons of carbon dioxide equivalent (tCO₂eq) annually. Projected results are shown in **Annex 1**.

6. The Project is progressing adequately, and no implementation red flags have been identified.³ A virtual monitoring mission on August 12-13, 2021, reviewed the environmental, social, procurement, and financial management of the Project.

¹ Subject to the Bank's prior review, where required. Two sub-projects are currently ongoing review.

² For each dollar of AIIB investment, the sub-projects receive approx. 2.4 dollars from other sources.

³ The latest Project Implementation Monitoring Report (PIMR) as of June 2021 is available online ([here](#)).

7. The Borrower has also made progress with the corporate development milestones agreed with the Bank at the approval stage (see **Table 2** below) and remains financially solvent as per its latest financial statements (see **Annex 5**).

Table 2. TKYB Corporate Development Plan

The Borrower shall comply with the following milestones in its corporate strategy development plan:		
(a)	<i>increase the number of its staff to at least: (i) 200 by the end of calendar year 2020; and (ii) 250 by the end of calendar year 2021</i>	<ul style="list-style-type: none"> As of August 12, 2020, the Bank's personnel is 263 (plus 14 pool personnel plus 19 security personnel totaling 296).
(b)	<i>confirm it has improved its core IT processes by end of June 2020</i>	<ul style="list-style-type: none"> Core IT processes have been improved by upgrading the IT Process infrastructure. As of today, the entire IT process architecture, including policy, procedure, and other documentation, is on a single web platform accessible by all parties on a need-to-know basis. Improvements are ongoing.
(c)	<i>implementing a sustainability management system by December 2020</i>	<ul style="list-style-type: none"> TKYB has established and disclosed its Environmental and Social Policy dated Jan. 2020. In addition, TKYB has prepared and published its inaugural sustainability report in accordance with Global Reporting Initiative (GRI) standards for the calendar year 2019.
(d)	<i>Establishing a new core banking system by end of June 2021</i>	<ul style="list-style-type: none"> Transformation of Bank's core banking system project is proceeding without major difficulties. The new system is operational as of the end of June 2021.

B. Lessons Learned from Implementation

8. The Project has provided AIIB with valuable lessons that are being incorporated into the preparation, design, and supervision of similar FI facilities:

a. **Partner selection.** The success of FI facilities is heavily dependent on the selection of good partners. In this Project, AIIB has benefited from working with an experienced FI partner that puts sustainable infrastructure and green transformation at the core of its investment mandate and corporate focus.

b. **Focus on renewable energies.** The existing facility was designed to focus primarily on renewable energy and energy efficiency financing, which can be recognized as Climate Finance under the relevant joint-Multilateral Development Banks methodology. Facilities like the Project, with a clearly defined and narrow scope, help AIIB quickly rollout financing to projects and provide impetus to the development of climate mitigation in its Members.

c. **Sub-project pipeline projection and retroactive financing.** The development of a solid investable Sub-project pipeline requires substantial work and calls for flexibility regarding to the timing of Sub-project funding.

Building on the experience of the facility, the Bank should consider using the full retroactive finance window (12 months), in line with the limits of the Bank's Directives.⁴

d. **Prior review of FI sub-projects.** For Category A and selected Category B subprojects, external qualified environmental and social (ES) consultants were engaged by TKYB to assist in the ES due diligence. Through AIIB's prior review and approval of these same subprojects, the Project Team has provided feedback to improve the scope, depth, and evaluation of the ES due diligence. Over time, the Project Team observed a gradual improvement on TKYB's ES capacity, due diligence, and documentation. As most of the sub-projects are renewable wind energy-related in Turkey and they have common ES risks, TKYB has gained familiarity and confidence with common implementation issues. AIIB has thus been able to recognize the strength and capability of TKYB as a client and can now realize the operational efficiency that FI operations afford. During the last virtual meeting, TKYB welcomed the Project Team's proposition of an information sharing session to better understand Turkish laws and IFI requirements on land acquisition and involuntary resettlement. This is part of our overall effort to deepen client relationship and adding value to TKYB's Environmental and Social Management System (ESMS).

3. Change Requested

A. Proposed Change

9. To increase the Loan amount by providing an additional sovereign-backed facility of USD100 million as a new facility under the same Project, to support eligible uses, notably additional renewable energy sub-projects (the Additional Loan).

B. Rationale

10. Given the rapid absorption of the initial USD200 million Loan and the strong pipeline of potential renewable energy sub-projects, the Borrower and the Member have asked the Bank about the possibility of increasing the facility within the same implementation period to support TKYB's growing pipeline of renewable energy opportunities in Turkey. The pipeline includes potential sub-loans of up to approx. USD160 million to support 261.5 MW of renewable energy installed capacity (see **Annex 3**). Each sub-project will be assessed separately, subject to the review of each sub-project appraisal form and the Bank's non-objection.⁵

11. The Additional Loan will be processed as a material change under the Bank's Operational Policy on Financing (section 5.5.3) and the relevant internal administrative guidance. The Board of Directors is therefore requested to approve the material change as the original approving authority of this Project.

⁴ AIIB Directive on Sovereign and Non-sovereign-backed financings (April 28, 2020). [Link](#).

⁵ The additional investment pipeline, will be subject to the approval procedure contemplated in the Project operations manual.

12. The Additional Loan will entail a new facility loan agreement with the same Borrower and an additional guarantee agreement with the Guarantor under the same Project number. Changes to the Project Operations Manual will be limited. No changes to the fiduciary, ES aspects of the Project are expected, as the arrangements of the original transaction are deemed satisfactory as approved by the Board in Nov. 12, 2019.

13. The Additional Loan will increase the Project headroom amount and is not expected to materially change the parameters of the original facility, such as the closing date (March 2024) and the final maturity date (February 2036).

14. The Additional Loan will be subject to the terms, conditions, and pricing currently applicable to sovereign-backed financings. The Additional Loan will therefore be priced according to variable spread and subject to the applicable pricing decision. In addition, commitment fees and front-end fee will be charged on the Additional Loan amount. The front-end fee may be capitalized, as per a recent transaction with the Borrower.⁶

15. The Project will advance the development of additional utility-scale installed capacity, thereby contributing to the decarbonization goals of the Turkish economy. According to the International Energy Agency (IEA),⁷ Turkey has seen considerable diversification of its energy mix and growth in renewable energy installations in the past decade (notably solar, wind, and geothermal), driven by a favorable resource endowment, strong energy demand growth, and supportive government policies and tariff mechanism (YEKDEM). As a result, renewable electricity generation's share in total power generation reached 44 percent in 2019, exceeding the target of power generation from renewables (39 percent) set out under the country's 11th Development Plan (2019-2023). Turkey aims to continue promoting the expansion of renewable energy resources and will commission 10GW each of solar and wind capacity in 2017-2027. See **Annex 5** for more information on the sector and member context.

16. The Additional Loan is expected to enhance the impact and Climate Finance dimension of the Project and facilitate the provision of long-term debt to private sector sub-borrowers, notably, renewable energy independent power producers. In addition, the proposed pipeline of projects (see **Annex 3**) predominantly features wind and solar opportunities.⁸ Therefore, up to 100 percent of the Additional Loan may therefore be classified as Climate Finance under the relevant joint-Multilateral Development Banks methodology.

17. The Additional Loan, if approved, will expand the total sovereign-backed commitments to TKYB to USD600 million and the total signed sovereign and non-

⁶ Project 000381 Turkey: Covid-19 Credit Line project (TKYB loan). [Link](#).

⁷ IEA (2021). *Energy Policy Review*. [Link](#).

⁸ The pipeline does not include geothermal generation. The Borrower benefits from other dedicated facilities to cater for the long-term finance needs of the geothermal sector. For example, the World Bank (IBRD) is currently considering an additional financing to TSKB and TKYB to scale-up private sector investment in geothermal energy development in Turkey (see P172827, Turkey Geothermal Development Project Additional Financing, [link](#))

sovereign approved commitments to Turkish financial institutions in the last four years
to USD1,450 million.

Annex 1: Results Monitoring Framework (Interim Results)

Project Objective:	To advance Turkey's renewable energy and energy efficiency infrastructure.										
Indicator Name	Units	Base-line Data Year	Cumulative Target Values						End Target	Frequency	Responsibility
			YR1 2020	YR1 2021	YR1 2022	YR1 2023	YR1 2024	YR1 2025			
Project Objective Indicators:											
1. Total renewable energy generation capacity installed	MW	2019	56	130 (expected)	470 (expected)	TBD	TBD	TBD	>500	Annual	TKYB
2. Reduced CO ₂ . Amount of reduced CO ₂ per unit energy produced due to the sub-projects	tCO ₂	2019	N/A	82,529 (expected)	244,034 (expected)	728,573 (expected)	TBD	TBD	>1,000,000	Annual	TKYB
3. Primary energy consumption saved	GWh	2019	This is dependent on the number of energy efficiency sub-projects. To be defined during implementation upon firming up the project pipeline. No energy efficiency projects have been proposed under the facility to date.						Annual	TKYB	
4. Amount invested in Renewable energy Projects	USD million	2019	82.7	317.6 (expected)	615.8 (expected)	TBD	TBD	TBD	750.0	Annual	TKYB
5. Amount invested in energy efficiency projects	USD million	2019	This is dependent on the number of energy efficiency sub-projects. To be defined during implementation upon firming up the project pipeline. No energy efficiency projects have been proposed under the facility to date.						Annual	TKYB	

Results are provisional. (P) denotes 'Projected'. TBD denotes to be defined until firming up of the Sub-project pipeline. The exact target amounts for the intermediate years will depend on the specific projects financed by AIIB's Loan and will be finalized during the Project's implementation. Reduced tCO₂ emissions remain subject to individual sub-project performance and project portfolio composition.

Annex 2: Loan Sub-project Portfolio⁹

#	Region	Sector	Cost USD M	TKYB Loan		Other debt USD M	Equity USD M	ESF Cat.	Progress %	Capacity MW	Tariff USDc/ MWh	Estimated Output MWh/yr	Estimated emissions to be avoided tCO ₂ e/ year	Status
				TKYB Loan USD M	AIIB Sub-loan USD M									
1	Istanbul	Wind	73.1	28.0	28.8	31.8	13.3	B+	85% (Jul-21)	50.0	7.30 -9.40	132,000	75,240	No objection
2	Yalova	Wind	64.4	22.9	22.9	29.8	11.7	B+	100% (Aug-21)	50.0	7.30 -9.40	126,500	72,105	No objection
3	Çanakkale	Wind	60.1	23.6	23.6	25.6	10.9	B+	85% (Aug-21)	44.0	7.30 -9.40	134,000	76,380	No objection
4	Muğla	Wind	37.3	16.4	16.4	12.5	8.4	B-	100% (May-21)	25.2	7.30 -9.40	69,500	35,028	No objection
5	Karaman	Wind	49.7	42.2	42.2	--	7.5	B-	100% (Q4 2020)	40.0	7.30 -9.40	130,450	65,747	No objection
6	Karaman	Wind	11.9	10.1	10.1	--	1.8	B-	100% (Q4 2020)	10.0	7.30 -9.40	33,200	16,732	No objection
7	Konya	Biomass	21.8	16.3	10.9	--	5.5	B+	100% (Dec-20)	6.0	13.30	31,500	50,000	No objection
8	Bilecik	Wind	97.1	37.6	25.0	40.1	19.4	B+	TBD	90.0	7.30 -9.40	196,000	98,784	No objection
9	Kocaeli	Wind	63.7	27.5	16.7	20	16.2	B+	TBD	49.0	7.30 -9.40	121,000	60,984	Pending review
10	Yavlova-2	Wind	136.7	68.5	4.2	41.3	27.9	B+	20% (Sep-21)	110.0	7.30	286,500	177,573	Pending review
	TOTAL		615.8	293.1	200.0	201.1	122.6			474.2		1,260,650	728,573	

⁹ Commercially sensitive details to be removed from the finally published version. Estimated output and emissions remain subject to individual sub-project performance and final portfolio composition.

Annex 3: Additional Renewable Energy Loan Indicative Pipeline¹⁰

Type	Location	TKYB Approval	E&S Reports	AIB Sub-loan / Currency		Capacity, MW	Tariff \$c/MWh
Wind	Bursa	Approved	Completed	89,500,000	USD	120.0	9.40
Biomass	İstanbul	Approved	Completed	10,767,293	USD	18.0	13.30
Wind	İzmir	Approved	Completed	25,400,000	USD	23.0	9.40
Wind	Kırkkale	Approved	Completed	5,500,000	USD	40.5	4.19-6.29
Wind	Trabzon	Approved	Completed	2,525,000	USD	30.0	7.30-8.60
Solar	Bingöl	Approved	Completed	20,000,000	USD	20.0	TBD
Solar	Bilecik	Approved	Completed	6,800,000	EUR	10.0	TBD
TOTAL				153,692,293	USD	261.5	
				6,800,000	EUR		

¹⁰ Commercially sensitive details to be removed from the finally published version.

Annex 4: TKYB Key Financials

TKYB's long-term foreign-currency issuer default rating has been reaffirmed BB- by Fitch on May 18, 2021, with a stable outlook, equalized with the sovereign rating. The rating is driven by the high-government propensity to provide support in case of need, given the Bank's state ownership, policy role, significant Treasury-guaranteed funding, and record of support from the authorities (TRY750 million core capital injection in 2020 and EUR150 million Tier-1 capital injection in 2019).

TKYB, key financials, USD thousands	2018	2019	2020
Period End Date	31-Dec-2018	31-Dec-2019	31-Dec-2020
Auditor Name	KPMG	KPMG	KPMG
Avg. FX Rate (TRY/USD)	0.206665	0.176146	0.142475
<i>Income Statement</i>			
Interest Income, Bank	142,407	199,599	173,304
Total Interest Expense	48,018	74,937	68,258
Net Interest Income	94,389	124,662	105,045
Loan Loss Provision	31,986	12,690	28,811
Net Interest Inc. After Loan Loss Prov.	62,403	111,972	76,235
Non-Interest Income,	9,257	14,353	40,832
Non-Interest Expense, Bank	(21,071)	(23,051)	(28,622)
Net Income Before Taxes	50,589	103,275	88,444
Provision for Income Taxes	17,462	24,519	16,945
Net Income	33,127	78,756	71,500
<i>Assets</i>			
Cash & Due from Banks	270	100	152
Other Earning Assets, Total	358,403	725,732	1,058,562
Net Loans	2,579,855	2,504,333	2,697,576
Property/Plant/Equipment, Total - Gross	30,260	33,678	9,072
Property/Plant/Equipment, Total - Net	11,556	15,938	6,208
Intangibles, Net	323	351	2,388
Long Term Investments	13,797	2,683	2,764
Other Long-Term Assets, Total	330	0	2,421
Other Assets, Total	7,419	8,477	7,286
Total Assets	2,971,953	3,257,615	3,777,356
<i>Liabilities</i>			
Total Deposits	163	8,468	27,634
Total Short-Term Borrowings	-	19	12,665
Other Current liabilities, Total	6,626	7,707	6,075
Total Long-Term Debt	2,633,333	2,821,840	3,216,768
Total Debt	2,633,333	2,821,859	3,229,433
Deferred Income Tax	-	1,964	0
Other Liabilities, Total	63,797	21,441	31,411
Total Liabilities	2,703,919	2,861,438	3,294,553
<i>Shareholders' Equity</i>			
Common Stock, Total	94,559	142,908	215,285
Additional Paid-In Capital	299	333	496
Retained Earnings (Accumulated Deficit)	168,066	246,823	265,063
Other Equity, Total	5,110	6,112	1,960
Total Equity	268,034	396,177	482,803
<i>Ratios</i>			
Efficiency Ratio	20.3%	16.6%	19.6%
Operating Leverage	59.8%	29.0%	(23.8%)

Non-interest Income / Op Inc	0.09	0.08	0.26
% Fee Revenue	5.4%	2.0%	3.0%
Loan Growth	96.9%	9.2%	34.6%
Loan Loss Provision (% of Avg. Loans)	1.50%	0.50%	1.16%
Nonperforming Loans (% of Total Loans)	0.90%	0.77%	0.45%
Tier 1 Risk-Adjusted Capital Ratio	10.49%	19.46%	19.47%
Securities % Avg. Earning Assets	1.7%	9.6%	10.0%

Annex 5: Member and Sector Context

A. Member context

1. Turkey has achieved significant economic and social development since the early 2000s, leading to increased employment and making Turkey an upper-middle-income country. Since 2000, Turkey has maintained a long-term focus on implementing reforms in many areas, and the government programs have targeted vulnerable groups and disadvantaged regions. Gross Domestic Product (GDP) per capita increased from around USD3,100 in 2001 to around USD12,500 in 2013. The incidence of poverty fell from 37 percent in 2003 to 8.5 percent in 2018.¹

2. During this time, Turkey rapidly urbanized, maintained strong macroeconomic and fiscal policy frameworks, opened to foreign trade and finance, harmonized many laws and regulations with the European Union (EU) standards, and greatly expanded access to public services. It developed expertise in medium-technology production, shifting much of the labour force from farms to factories and increase the share of manufacturing and services in GDP as well as employment. Turkey's economy is relatively diverse in nature and does not rely on a single major exporting product. Major exports include vehicles and their parts (16 percent), electrical and electronics machinery (15 percent), textile and clothing (15 percent), and iron and other metals (13 percent). The top five exporting destinations are Germany (9 percent), United Kingdom (6.5 percent), Iraq (5.5 percent), Italy (5.4 percent), and the United States (5 percent).²

¹ Statistics and projections come from World Bank's Turkey Economic Monitor 5: Navigating the Waves, April 2021. Poverty is measured as the proportion of people with daily per capita consumption below USD5.5 equivalent in purchasing power parity terms.

² Observatory of Economic Complexity, Turkey page. [Link](#).

3. Despite significant growth in productivity and income, Turkey still employs a fifth of the workforce in agriculture-related activities, well above the average for high-income countries. Female labor force participation is well below the average for industrialized countries. Turkey is one of the few major economies whose population is still expected to grow, and the dependency ratio to fall in the next two decades. It would require creating new and better jobs to accommodate the growing labor force. As Turkey has already exploited the medium technology production, new sources of productivity growth will have to come from technology absorption, innovation, and 'moving up the value chain' in the manufacturing and services sector. Turkey's growth prospects, therefore, rely on the extent to which it can establish the conditions for such within-sector productivity growth.

4. However, in the past few years, growing economic vulnerabilities and a more challenging external environment have threatened to undermine the progress. There has been a perceived slowdown in reforms recently and, together with economic vulnerabilities, this slowdown risks reversing some of the gains achieved earlier. Since 2016, the sovereign credit rating of Turkey has been declining. In late 2018, market sentiment deteriorated abruptly and along with the Fed's policy tightening, led to capital outflows, a sharp lira depreciation, and a surge in inflation. GDP growth slowed markedly in 2018 and 2019. Overall, GDP per capita fell from USD12,489 in 2013 to USD9,150 in 2019. In March 2021, the government has announced an ambitious economic reforms program to address the structural and macroeconomic issues in the economy.

5. The COVID-19 pandemic was a major hit to the Turkish economy as all over the world, with a decline in tourist arrivals, falling domestic activity due to social distancing and lockdown measures and lower external demand. Despite these challenges, Turkey has performed better than expected, and managed to avoid recession in 2020. The swift recovery can be attributed to the robust health system and large credit stimulus which supported domestic activity through 2020 despite a sharp drop-off in external demand. Despite the recent spike in the COVID-19 cases and tightening of the monetary policy, the GDP growth is projected to strongly rebound to

9.0 percent for 2021. For 2022 and 2023, GDP growth is expected to return to its potential, of around 3.3 percent.^{3 4}

6. Despite the pandemic risks, the Turkish banking sector has been resilient. It is adequately capitalized with capital adequacy ratios (CAR) well above the levels stipulated by international standards. Due to the large credit expansion and flexibility introduced during the pandemic, the non-performing loans ratio remains low at 3.7 percent, and standard CAR is 17.3 percent as of August 2021.⁵ However, Turkey's reliance on USD debt to fund its credit expansion over the past decade has increased, with nonfinancial corporates and banks taking on external debts. The banking sector faces a large external debt obligation, equivalent to USD152.28 billion as of July 2021.⁶

7. As a result of COVID-19 some 1.6 million people, or around two percent of the population, are expected to fall below the poverty line, increasing the poverty rate to 12.2 percent.⁷ In the aftermath of the pandemic outbreak, Turkey had lost 2.45 million jobs (8.7 percent of total employment) in first two quarters of 2020, with job losses concentrated among informal workers, lower-skilled, women and youth. High inflation also contributed to increasing poverty. With the quick recovery, the economy recouped 1.4 million jobs (or two-third of the job losses) in the third quarter of 2020 but most of these jobs were in the formal sector and for the skilled workers. The government social emergency package which encompassed transfers to households, unemployment insurance benefits, unpaid leave subsidies and grants to businesses was important in averting even worse outcomes.

³ IMF, World Economic Outlook, October 2021.

⁴ *The government authorities are optimistic to achieve a higher GDP growth in future than the one estimated by IMF*

⁵ BDDK, update August 2021. [Link](#).

⁶ Central Bank of the Republic of Turkey, EVDS. [Link](#).

⁷ The World Bank, The urgency of promoting a more equal recovery: Insights from the COVID-19 crisis in Turkey, February 2021. [Link](#).

8. The government encourages PPPs in all kinds of infrastructure projects to fill the infrastructure investment gap. There have been more than 200 different types of active PPP infrastructure projects in Turkey, currently in operation or under-construction, with an aggregate investment of USD145 billion. In 2020 alone, projects worth more than USD400 million achieved financial closure under the PPP framework in the renewable energy sector.⁸ Economic growth, coupled with population growth, will drive strong growth in energy demand and non-hydro renewable energy is well-poised to double the installed capacity in the next decade.⁹

9. Turkey is increasingly exposed to the risks of climate change. The country faces the risk of more frequent extreme weather events— including flooding, droughts, forest fires, and coastal erosion—due to climate change. Without adequate mitigation measures, these risks could lead to reductions in food production and disruptions in industrial supply chains. A survey of large Turkey-based publicly traded firm in 2018 found that 31 percent of them had suffered detrimental financial impacts from water-related events during the most recent 12-month period.¹⁰

B. Sector and Institutional Context

1. Turkey is highly dependent on fossil fuel imports, particularly oil and gas. In 2019, fossil fuels accounted for approximately 83 percent of total primary energy supply (TPES) and about 73 percent of total final energy consumption (TFC) in 2018. In 2019, only 31 percent of TPES was from domestic energy production. In 2018, the industrial sector had the highest share of TFC with 36 percent, followed by the transport sector with 27 percent, residential sector with 21 percent and services/other sectors with 17 percent.¹¹

⁸ The World Bank, PPP Knowledge Lab, Turkey page.

⁹ Fitch Solutions-Turkey Renewables report- update Q3-2021. [Link](#).

¹⁰ CDP Worldwide, CDP Climate Change and Water Report 2018, Turkey Edition.

¹¹ IEA, 2021. Turkey 2021 – Energy Policy Review. [Link](#).

2. Electricity generation grew rapidly in the last ten years from 198 Terawatt hours (TWh) in 2008 to 304 TWh in 2019. In 2019, about 58 percent of electricity generated was from fossil fuels, of which coal had the largest share with 36 percent, followed by hydropower with 29 percent, gas with 20 percent, wind with 7 percent, solar photovoltaic (PV) with 3 percent and geothermal with 3 percent. Comparatively installed electricity capacity rose from 42 gigawatts (GW) in 2008 to about 91 GW by 2019, of which hydropower had the largest share with 31percent, followed by natural gas with 24 percent, coal with 21 percent, wind with 8 percent, solar with 7 percent and geothermal with 2 percent.¹²

3. The Ministry of Energy and Natural Resources (MENR) is responsible for formulating and implementing energy policies and regulating the energy sector. The Electricity Generating Company (EUAS), which owns the public-owned power plants, and the Turkish Electricity Trade and Contracting Company (TETAS), which was responsible for electricity wholesale trading, are both state-owned and formally merged in 2018. The Turkish Electricity Transmission Company (TEIAS) is the sole transmission grid owner and power system operator and is responsible for maintaining and developing new transmission lines and system operation (load dispatch and balancing). The Turkish Electricity Distribution Company (TEDAŞ) is asset owner of the distribution grid and responsible for the supervision and control of investments from the 21 distribution companies. The Energy Market Regulatory Authority (EMRA) is the regulator of the electricity, natural gas, downstream petroleum, and liquefied petroleum gas markets. For example, for the electricity distribution sector, EMRA is responsible for setting specific loss reduction targets for each of the 12 distribution companies.¹³

4. Turkey's 11th Development Plan (2019-2023) provides the long-term vision and roadmap for the country.¹⁴ For the energy sector, the Plan sets specific targets to be met by 2023, such as:

¹² TEIAS, 2021. Turkey Electricity and Transmission Statistics. [Link](#).

¹³ IEA, 2021. Turkey 2021 – Energy Policy Review. [Link](#).

¹⁴ Presidency of the Republic of Turkey. 11th Development Plan (2019-2023). [Link](#).

- (i) Reducing the share of natural gas in electricity production from 29.9 percent to 20.7 percent;
- (ii) Increasing the share of renewable energy sources in electricity production from 32.5 percent to 38.8 percent;
- (iii) Increasing the amount of electricity produced from domestic energy sources from 150 TWh to 219.5 TWh;
- (iv) increasing primary energy usage per capita from 1.81 tonnes oil equivalent (toe) to 2.01 toe;
- (v) increasing electricity usage per capita from 3.7 Megawatt hours (MWh) to 4.3 MWh to be closer to the world average.

5. The Economic Reform Action Plan (March 2021) sets specific actions related to the energy sector such as i) supporting energy efficiency in the building, agriculture and service sectors through amendments to the Energy Efficiency Law; ii) establishment of legal framework for energy storage facilities; iii) restructuring of the natural gas market to enable a free and competitive market; iv) establishment of green organized industrial zones with high resource efficiency and able to meet their own energy needs; v) preparation of a National Circular Economy Action Plan; vi) development of environmentally friendly, sustainable and smart transportation infrastructure; v) establishment of electric vehicle charging infrastructure and vi) promotion of electric vehicle use in public transport and services.

6. The Ministry of Energy and Natural Resources (MENR) Strategic Plan (2019-2023) sets six broad goals for the energy sector: (i) ensuring sustainable and secure energy supply; (ii) prioritizing and increasing energy efficiency; (iii) strengthening institutional and sectoral capacity; (iv) increasing regional and global trade in energy and natural resources; (v) increasing domestic technology development; and (vi) increasing energy market predictability.¹⁵

¹⁵ MENR, 2019. Strategic Plan (2019-2023). [Link](#).

7. Under the MENR Strategic Plan (2019-2023), there are several specific targets to be achieved by 2023, such as:

- (i) Increase electricity supply from domestic and renewable energy resources from 59 percent to 65 percent;
- (ii) Increase installed solar power capacity from 5 GW to 10 GW;
- (iii) Increase installed wind power capacity from 7 GW to 12 GW;
- (iv) Increase installed hydropower capacity from 28 GW to 32 GW;
- (v) Increase installed geothermal and biomass capacity from 2 GW to 3 GW.

8. The National Renewable Energy Action Plan (2014) aims to increase renewable energy power capacity to 61 GW by 2023, of which 34 GW for hydropower, 20 GW for wind, 5 GW solar, 1 GW geothermal and 1 GW biomass. The geothermal target was recently revised to 4 GW by 2030. In 2018, Turkey had already surpassed the solar and geothermal targets, but it is unlikely to meet the hydropower and wind goals by 2023 at the current growth rate. Therefore, the MENR Strategic Plan (2019-2023) is a more achievable and realistic roadmap for reference.¹⁶

9. From 2019-2024, the International Energy Agency (IEA) expects additional renewable energy capacity of 21 GW, driven mainly by new policy support for distributed solar PV and utility scale auctions (YEKA). Under IEA's main scenario, Turkey's renewable energy capacity is expected to rise from 42 GW in 2018 to reach 63 GW by 2024, of which an additional 3 GW will be from distributed solar PV. IEA indicates that affordable financing remains a challenge for the renewable energy sector due to the TRY depreciation and high interest rates for loans.¹⁷

10. Turkey has four main renewable energy incentive schemes: i) Renewable Energy Support Mechanism (YEKDEM); ii) Renewable Energy Resource Areas (YEKA); iii) unlicensed electricity generation regime and iv) net metering.

¹⁶ National Renewable Energy Action Plan for Turkey. [Link](#).

¹⁷ IEA. 2019. Renewables 2019 - Market analysis and forecast from 2019 to 2024. [Link](#).

11. The Renewable Energy Support Mechanism (YEKDEM) sets the feed-in tariffs for wind, solar, biomass, hydropower¹⁸ and geothermal projects. YEKDEM expired at the end of 2020 but was extended by six months until June 2021 due to the COVID-19 pandemic. In January 2021, the tariffs were updated with significant decreases in prices for all renewable energy sources. The tariffs are now valid for 10 years and eligible projects must be in operation from 1st July 2021 to 31st December 2025. Additional tariffs for locally manufactured equipment are valid for 5 years.

12. YEKA is an auction mechanism for large scale renewable energy projects located in allocated areas specific for renewable energy development. A total of five YEKA auctions were issued from March 2017 to September 2021 with 15-year feed-tariffs awarded to the winning bids:

- (i) The first 1 GW auction was for solar PV projects, awarded in March 2017, with requirements to setup local manufacturing and with 65percent local content requirement.
- (ii) The second 1 GW auction was for onshore wind projects, awarded in August 2017, with 65percent local content requirement.
- (iii) The third 1 GW auction for onshore wind projects, awarded in March 2019.
- (iv) The fourth 1 GW auction for solar PV projects, awarded in March 2021. This auction comprised of 74 tenders across 36 regions. Project capacities ranged from 10-20 MW and tariff was fixed at 0.35 TRY/kWh (0.048 USD/kWh) for a period of 15 years.
- (v) The 1.2 GW offshore wind auction issued in 2018 was postponed.

13. The unlicensed electricity generation regime, introduced in 2013, comprised of attractive feed-in tariffs led to a major growth of rooftop and ground-mounted solar PV projects from 1 MW to 5 MW capacity. To help address the huge growth of unlicensed solar PV projects, the government introduced a net metering scheme in 2019 for residential, commercial, and

¹⁸ Only run-of-river and diversion type hydropower plants and hydropower with reservoir areas less than 15 km²

industrial sectors. It covers both self-consumption and supply of excess generation to the grid. The eligible projects are mainly solar rooftop applications. Eligible projects cannot exceed the capacity required by the respective consumption facilities and therefore it is limited to maximum 10 kW for only 10 years of surplus generation. Based on the World Bank, 3 GW of 3.9 GW economical potential for rooftop solar PV is in the commercial (1.5 GW) and industrial sectors (1.5 GW).¹⁹

14. Turkey's Intended Nationally Determined Contribution sets a goal to reduce greenhouse gas emissions by 21 percent by 2030 against a business-as-usual scenario. Turkey's Grand National Assembly ratified the Paris Agreement in October 2021. Turkey has committed to achieving net-zero carbon emissions by 2053.²⁰

¹⁹ World Bank, 2018. Turkey - Rooftop Solar PV Market Assessment. [Link](#).

²⁰ Climate Home News. (2021, October 6). Turkey Ratifies the Paris Agreement After Approving a 2053 Net Zero Goal. [Link](#)