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<p>Key results:</p> <ul style="list-style-type: none"> - Strengthen the development of a district heating and cooling sector by improved regulatory framework and assessment procedures for heating and cooling. - National capacities for energy modelling and long term energy planning are enhanced, to support continued least-cost and low carbon energy system development. <p>Justification for support:</p> <ul style="list-style-type: none"> - The project will continue the focus since 2015 on green energy transition and reduction of Türkiye import dependency on energy. Due to the present energy and inflation crises in Turkey the government's priority is to ensure stable and cheap energy supply. Increasing the use of district heating have the long-term dual impact of reducing import of energy and CO2 emissions. - The project will assist in the successful implementation of the district heating law and its secondary regulations, which have been the main element in the Turkey-Danish cooperation. - Based on the experience and results of the 2nd phase of the project the Turkish partners have requested an continuation of cooperation on power and energy system modelling. In the 3rd phase, the project will work towards quantifying the respective benefits of continuously pushing the boundaries of planning for green transition. - The project will include activities designed to explore how commercial green solutions can support the development of the energy sector. - The experience of exit from the 10 years of SSC engagement will be documented and used for internal learning in the Danish Energy Agency. <p>Major risks and challenges:</p> <ul style="list-style-type: none"> - Approval of the proposed amendment to the Geothermal and Heat Law fails, thereby jeopardizing the main instrument for piloting modern district heating. - The election 2023 may promote new political priorities not friendly to introducing improved regulatory frameworks for developing district heating. 	<p>File No.</p> <p>2023-1288</p>																					
	<p>Country</p> <p>Türkiye</p>																					
	<p>Responsible Unit</p> <p>GDK</p>																					
	<p>Sector</p> <p>23110 – Energy policy and administrative management</p>																					
	<p>Partner</p> <p>Danish Energy Agency</p>																					
	<p><i>DKK million</i></p> <table border="1"> <thead> <tr> <th></th> <th>2023</th> <th>2024</th> <th>2025</th> <th>20xx</th> <th>20xx</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Commitment</td> <td>3,3</td> <td>3,3</td> <td>3,4</td> <td></td> <td></td> <td>10</td> </tr> <tr> <td>Projected disbursement</td> <td>3,3</td> <td>3,3</td> <td>3,4</td> <td></td> <td></td> <td>10</td> </tr> </tbody> </table>		2023	2024	2025	20xx	20xx	Total	Commitment	3,3	3,3	3,4			10	Projected disbursement	3,3	3,3	3,4			10
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	Projected disbursement	3,3	3,3	3,4			10															
	<p>Duration</p>																					
	<p>Previous grants</p> <p>DKK 1,269,885 (Inception Phase); DKK 7,266,419 (Phase I), DKK 10.000.000 (phase 2)</p>																					
	<p>Finance Act code</p> <p>§06.38.02.14</p>																					
	<p>Head of unit</p> <p>Elsebeth Søndergaard</p>																					
	<p>Desk officer</p> <p>Lone Bøge Jensen</p>																					
<p>Reviewed by CFO</p> <p>Rasmus Tvorup Ewald</p>																						
<p>Relevant SDG</p> <table border="1"> <tbody> <tr> <td> No Poverty</td> <td> No Hunger</td> <td> Good Health, Wellbeing</td> <td> Quality Education</td> <td> Gender Equality</td> <td> Clean Water, Sanitation</td> </tr> <tr> <td> Affordable Clean Energy</td> <td> Decent Jobs, Econ. Growth</td> <td> Industry, Innovation, Infrastructure</td> <td> Reduced Inequalities</td> <td> Sustainable Cities, Communities</td> <td> Responsible Consumption & Production</td> </tr> <tr> <td> Climate Action</td> <td> Life below Water</td> <td> Life on Land</td> <td> Peace & Justice, strong Inst.</td> <td> Partnerships for Goals</td> <td></td> </tr> </tbody> </table>	 No Poverty	 No Hunger	 Good Health, Wellbeing	 Quality Education	 Gender Equality	 Clean Water, Sanitation	 Affordable Clean Energy	 Decent Jobs, Econ. Growth	 Industry, Innovation, Infrastructure	 Reduced Inequalities	 Sustainable Cities, Communities	 Responsible Consumption & Production	 Climate Action	 Life below Water	 Life on Land	 Peace & Justice, strong Inst.	 Partnerships for Goals					
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Strategic objective

The capacity of the Turkish Ministry of Energy and Natural Resources is strengthened in order to develop relevant policies, strategies and solutions to enable planning and implementation of a just, least-cost, efficient energy transition, and sustainable development for Türkiye. In this way Türkiye can enhance their changing framework conditions after signing of the Paris Agreement and announcing a revised NDC and Net Zero Plan for 2053.

Environment and climate targeting - Principal objective (100%); Significant objective (50%)

	Climate adaptation	Climate mitigation	Biodiversity	Other green/environment
Indicate 0, 50% or 100%		100 pct.		
Total green budget (DKK)		100 pct.		

Justification for choice of partner:

Turkish Ministry of Energy and Natural Resources (MENR) is the natural and only partner for this kind of government-to-government cooperation.

Summary:

Since the 1st phase of the strategic sector cooperation the Danish Energy Agency has supported the drafting of legislation and design of framework conditions for efficient systems of heating and cooling. The SSC has contributed to the draft Heat Law (1st phase) and a proposed amendment to the Geothermal Law (2nd phase), while also engaging with heat planning and project practices. The 3rd phase would be able to explore in more detail how the improved framework conditions will support implementation of district heating projects that replace fossil fuels in heating. In parallel to the cooperation on district heating the project will continue cooperation with relevant departments of the Ministry of Energy and Natural Resources in order to improve capacity in power and energy system modelling and integrating heat planning into the overall energy planning.

Budget (engagement as defined in FMI):

DEA experts	6.649.044
Travel and reimbursable	1.077.600
Activities	210.000
Consultancies	1.647.340
Unallocated funds	516.016
Total	10.000.000

**Project Document for Strategic Sector Co-
operation in
Energy
between
Denmark and Türkiye**

General information		MFA File no. 2023-1288
Project Title	Strategic Sector Cooperation in the energy sector	
Partner Country	Republic of Türkiye	
Project duration (years/months)¹	3 years 2023 -2025	
Total budget (DKK)	10.000.000 DKK	
Thematic focus	<p>Within the area of energy the thematic focus is two-folded:</p> <p>i) Efficient and low carbon supply of heating and cooling</p> <p>ii) Energy planning and modelling</p>	
Partner Public Authority	Turkish Ministry of Energy and Natural Resources (MENR)	
Contact person and contact details	<ul style="list-style-type: none"> • Dr. Bilal Düzgün, Head of Planning and Audit Department, Department of Energy Efficiency and Environment (D3E), bi-lal.duzgun@enerji.gov.tr • Özgür Sarhan, Head of Energy Security of Supply, Markets and Statistics Department, General Directorate of Energy Affairs (GDEA), osarhan@enerji.gov.tr 	
Responsible Danish Public Authority	Danish Ministry of Climate, Energy and Utilities:	
Contact person and contact data	<ul style="list-style-type: none"> • Anna Katrine Guldager Lynenskjold, Advisor, ankly@kefm.dk <p>Danish Energy Agency (DEA):</p> <ul style="list-style-type: none"> • Ole Emmik Sørensen, Director, oes@ens.dk • Susana Paardekooper, Advisor, spkr@ens.dk 	
Danish Embassy	The Royal Danish Embassy in Türkiye, Ankara (RDE)	
Head of Representation	Danny Annan, Head of Representation, Ambassador of Denmark to Türkiye	
Sector Counsellor	Emrah Öztunc, Sector Advisor (start date: 1 January 2023).	
Summary of background analysis and key strategic choices	Main challenges in the energy sector The Turkish government faces an ongoing challenge, because the energy sector and economy are significantly dependant on imported energy. Despite long-standing diversification attempts, the recent energy	

¹ Project start will be date of Danish MFA approval

<p>(max 2 pages)</p>	<p>crisis has resulted in a six-fold increase of energy import costs, and an increase in Russian gas imports (to 45 pct. of total gas import) in order to secure energy supply for citizens.</p> <p>The Strategic Sector Cooperation engagement with Türkiye to address the challenges of gas import dependency started in 2015, and continues to be the main theme of this cooperation. This heavy energy import dependence is not only a cause of concern related to security of supply but it also has a negative effect on Türkiye’s trade balance, with record trade deficits being recorded and energy representing a third of imports.²</p> <p>The demand and rationale for the partnership in this third phase is further strengthened by the formalisation of Türkiye’s global climate commitments. In October 2021, Türkiye ratified the Paris Agreement, and simultaneously announced the ambition of an NDC and a Net Zero target by 2053. The partners to the SSC have together with DEA identified the need for capacity building for long term planning for a cost efficient green transition in the energy sector.</p> <p>Results and impacts from previous phases</p> <p>This project builds strongly on the work and relationships established from the previous SSC projects. An inception SSC project was undertaken from 2015 to 2017 in the field of energy and climate cooperation between Denmark and Türkiye. The project identified MENR as the primary cooperation partner of MCEU/DEA and heating and cooling as the main topic.</p> <p>In 2017, Phase 1 of the main SSC project was agreed with the objective of supporting the development of efficient heating and cooling. Phase 2 was agreed in 2020 with a two-fold thematic focus on continuing support to efficient and low carbon supply of heating and cooling and preparation of a roadmap for offshore wind in Türkiye. Relevant outcomes included providing a strong analytical basis and capacity for strengthened legislation on heating supply; an assessment of the potential and needs for drafting legislation on heat supply; and supporting the Turkish government to prepare for a Roadmap on offshore wind development in Türkiye. Significant outputs include:</p> <ul style="list-style-type: none"> • Strong analytical basis for strengthened legislation on heating supply • Completion of a comprehensive assessment of efficient heating and cooling for Türkiye, • Two pilots of local heat planning, • A Heat Policy Options report in response to legislative proposals of Heat Law and Geothermal and Heat Laws during the project period(s), and
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² [Trading Economics: Turkey Balance of Trade \(September 2022\)](#).

- A Roadmap for Offshore Wind, including a Marine Spatial Planning exercise, regulatory analysis, a port study and power system modelling.

This third phase will build directly on the previous outcomes for heating and cooling, and indirectly on the outcomes from offshore wind. In this latter topic, this third phase foresees a progression from the power sector modelling to supporting long-term energy planning and modelling, to give a broader perspective to energy efficiency, renewable energy and cost efficient energy system planning.

Strengths and contributions from DEA

The DEA has over several decades developed a core competence with long-term energy planning and district energy. The DEA has a long-standing competence on the regulatory framework for district energy development e.g. heat planning processes, market design, and project appraisal, and will continue to support the Department of Energy Efficiency and Environment in establishing a conducive framework for district energy development. The DEA will support the General Directorate for Energy Affairs in MENR with capacity building in relevant energy modelling tools and assist the further development of a Türkiye-specific modelling tool for the energy sector, building on the cooperation explored and established in the final year of Phase 2.

Exit strategy - Securing continued impact

In this last and third phase of the SSC, the engagement should explicitly consider how impact can be secured in the longer run. This includes consolidation of results of this and the previous phases, and preparing for potential future cooperation mechanisms, based on the cooperation and relationships established since the beginning of the SSC in 2015. An explicit exit strategy will be developed, to ensure long-term sustainability of the Danish Turkish cooperation. This includes consolidating on the work achieved in the various phases as well as activities that supports Danish-Turkish cooperation in global political settings (for example, COP and others), and through transfer of Danish knowhow by Danish investments or instruments in the energy sector.

The concrete activities in support of this exit strategy will be identified in the 1st year, and implemented and monitored throughout. This will be done per output, and may take time to determine, based on both internal progression (for example, the results of studies and activities proposed) and external framework conditions (for example, legislation and institutional changes as the Paris Agreement implementation evolves).

The DEA and MENR, together with the relevant partners, will identify where there could be future opportunities for commercial engagement (particularly as the framework supports more active exploration of district energy projects) or cooperation with other international partners

	<p>and donors. By including these considerations from the beginning, and through the development of a 3 year project, it is possible to ensure both completion and consolidation of the SSC development during the different phases, and establish a stable and appropriate basis for sustainability in the outputs.</p>
<p>Sustainable Development and the Sustainable Development Goals (SDGs)³</p>	<p>According to the UN; "Energy is central to nearly every major challenge and opportunity the world faces today. Be it for jobs, security, climate change, food production or increasing incomes, access to energy for all is essential."⁴ The experience from implementing an exit strategy will be followed by the management advisory group between the Danish Ministry of Climate, Energy and Utilities and the Ministry of Foreign Affairs.</p> <p>Direct impact:</p> <ul style="list-style-type: none"> • SDG 7: Affordable and Clean Energy – the SSC outputs will support development of the energy and heating sector with the aim to supply efficient, affordable, reliable and sustainable energy for all, based on least cost development. All goals, targets and indicators are relevant here, but particularly 7.1.2; 7.2.1; 7.3.1; and 7.b.1. • SDG 9: Infrastructure, industrialisation and innovation – the SSC explicitly sets out to support the development of quality, reliable, and sustainable infrastructures that support efficient local use of resources and manufacturing. Most relevant here are goals 9.2 9.4, and 9.a • SDG 13: Climate Action – the SSC outputs will work to support Türkiye’s Paris Agreement implementation, by informing both the National Energy Plan and National Energy Efficiency Action Plan, and further support MENR’s ambition to take action to mitigate climate change and its impacts at the lowest possible costs. Most relevant goal here is 13.2. • SDG 17: Partnerships for the goals – the bilateral partnership which will ensure coordination with other (bilateral and multi-lateral) donors and organisations in Phase III, to ensure sustainability and consolidation of the projects’ outputs beyond its length. Relevant goals are 17.9; 17.7; and 17.3.
<p>Project Logic (Theory of Change) 1/2-1 page</p>	<p>The theory of change of DEA’s engagement with MENR is that if ENS works with MENR on the topics described, then Türkiye is better placed to achieve its climate and sustainability objectives.</p> <p>Specifically:</p>

³ **Sustainable development** meets the needs of the present without compromising the ability of future generations to meet their own needs. The SDGs (adopted 2015) is a plan of 17 interlinked and integrated goals to achieve sustainable development

⁴ <https://sdg-tracker.org/energy/> / <https://www.unccd.int/resources/publications/fuel-life-securing-land-energy-nexus>

	<p>If the SSC with Türkiye can support MENR in enhancing their work on long-term energy planning and energy efficiency,</p> <p>Then MENR have enhanced internal capabilities for long-term energy planning and development and implement of a framework for efficient energy system, and</p> <p>Then MENR will have strengthened framework conditions in strategically important areas, and</p> <p>Then, MENR will be better able to set out stronger policy and direction, more concretely developing long-term energy planning and energy efficiency as tools to address energy imports, and enable access to affordable energy and low-carbon industrial development, and</p> <p>Then district heating and holistic long-term energy planning can be embedded as a useful solution in addressing energy import and affordability concerns, and</p> <p>Then natural gas and fossil fuel imports can be reduced, least-cost options identified for energy system change, and comprehensive strategies made for a just energy transition,</p> <p>Then, Türkiye will be better positioned to reach its national strategic goals for the energy sector and sustainable development more broadly.</p> <p>The strength of DEA’s international cooperation is that:</p> <ol style="list-style-type: none"> 1) There is a direct access to specific (technical) experts within DEA and MENR who will work directly with specific topics, in areas where there is a high likelihood of relevance and impact. 2) The DEA is experienced in government-to-government cooperation, and in this particular cooperation there is mutual appreciation the cooperation is geared at taking Danish experiences and lessons learned and adapting them specifically to a Turkish context. <p>The core of this project is effective knowledge transfer between DEA and MENR, enabling long-term capacity increase among the ministry directly, and relevant public and regional/municipal stakeholders in the broader engagement.</p>
<p>Main objective of SSC project</p>	<p>The capacity of the Turkish Ministry of Energy and Natural Resources is strengthened in developing relevant policies, strategies and solutions to enable planning and implementation of a just, least-cost, efficient energy transition, and sustainable development for Türkiye.</p> <p>In this way Türkiye can enhance their changing framework conditions after signing of the Paris Agreement and announcing a revised NDC and Net Zero Plan for 2053.</p>

<p>Outcome A</p>	<p>Improved regulatory framework and assessment procedures for heating and cooling, to strengthen the development of a district heating and cooling sector.</p>
<p>Output A.1</p>	<p>Integrated national and municipal heat planning</p> <p>Capacity increased to support implementation of decision-making frameworks for heating and cooling sectors, through continued developing of heat planning processes, further piloted in selected municipalities and related institutions by conducting feasibility analysis and capacity building activities.</p> <p><i>Proposed activities: Local planning processes building on Phase II methods, preferred to be in cooperation with social housing development companies or organised industrial zones in Türkiye and, if appropriate, conducting pre-feasibility studies in selected municipalities.</i></p> <p><i>Provisional indicators: pilot planning activities undertaken; project proposals (which represent a clear mechanism in the expected legal amendments) engaged with; and guidelines supported.</i></p>
<p>Output A.2</p>	<p>Mapping and data</p> <p>Strengthened knowledge transfer on the accessing, development, and exploitation of generalized data sets and methodologies to support specific national and local heat planning, taking into consideration results and data from Phase I and II.</p> <p><i>Proposed activities: capacity building for development of and operational use of thermal maps and cost data for Türkiye, developing methodologies to adapt international cost and operational data and indicators for a Turkish context, contribution to preparation of heat map of Türkiye by using GIS tools which will be open to public use and transferring of related dataset of GIS mapping to MENR to keep the activity outcomes updated and to sustain the capacity building and other project outcomes.</i></p> <p><i>Provisional indicators: workshops organised on relevant topics; contribution to map updates and populating data; and mapping and data managing practices engaged with.</i></p>
<p>Output A.3</p>	<p>Policy exchange and development</p> <p>Ongoing heat sector policy exchange with MENR and other relevant stakeholders to consolidate knowledge-sharing on lessons learned in Denmark, with specific focus on consolidating outcomes through ongoing legislation, broader Paris Agreement implementation, and implementing, where desirable, the outcomes and recommendations of the concrete results of Phase I and II.</p> <p><i>Proposed activities: capacity building and seminars building on outcomes of Phase I/II reports, knowledge transfer of best practices and experiences for Denmark, development of specific heating policies and regulation when relevant.</i></p>

	<i>Provisional indicators: cooperative follow-up on topics identified from Policy Options report; engagement on secondary legislation (communiqués); engagement on relevant policy topics through eg. notater.</i>
Outcome B	National capacities for energy modelling and long term energy planning are enhanced, to support continued least-cost and low carbon energy system development
Output B.1	<p>Development of energy models, including EST (Energy System Türkiye) Model</p> <p>Exchange and cooperation with the purpose of supporting ongoing EST Model development, for conducting long-term energy system analysis and supporting the 5 yearly recurring National Energy Plan development.</p> <p><i>Proposed activities: workshops, expert twinning, and knowledge transfer on best practices and methodologies for energy service demand projections; price projections; and sector coupling between energy sub-sectors.</i></p> <p><i>Provisional indicators: topics and depth of workshops and twinning organised; engagement with and contribution to model methodology and documentation</i></p>
Output B.2	<p>Capacity building for energy scenario modelling</p> <p>Knowledge-sharing and capacity building on topics related to using relevant energy models and scenarios to support long-term energy system planning, discourse and development.</p> <p><i>Proposed activities: workshops and seminars, study tour, knowledge transfer and other capacity building activities focussed on topics, including but not limited to energy economics, inclusion of broader macro-economic phenomena, sector coupling, net zero scenarios, etc. Exploring how energy modelling can relate to long-term energy system planning.</i></p> <p><i>Provisional indicators: topics and depth of workshops, twinning and study tour organised; engagement with and contribution to scenario design and documentation</i></p>
Output B.3	<p>Energy planning and modelling for policy development</p> <p>Supporting an enabling environment for the use of energy modelling and results as an input to policy making. Support presentation and framing of results and scenarios that can reflect the value and limitation of the use of long-term energy system models. This supports the development of national policy, targets, and ambitions based on least cost development of the national energy system while supporting economic growth and sustainable development.</p> <p><i>Proposed activities: transfer of best practices and knowledge on presenting and contextualising results of energy system models, preparing long term scenario analyses of the energy sector as contribution to analyses of, how to meet the 2053 net zero</i></p>

	<p><i>greenhouse gas emission target, expert twinning to discuss relative advantages/disadvantages, and seminars for discussion.</i></p> <p><i>Provisional indicators: topics and depth of discussions, relating to scenario and policy development; contribution (and cooperation) on scenario runs; support and contribution to policy outputs based on scenario runs.</i></p>
<p>Assumptions and risks</p>	<p>Main assumptions are:</p> <ul style="list-style-type: none"> • Continued political commitment from MENR to prioritise and carry out project activities is realistic. • Turkish and Danish experts can see relevance of Danish experiences for Türkiye. <p>Identified assumptions and risks related to a successful implementation of the SSC are:</p> <p><i>Approval of the proposed amendment to the Geothermal and Heat Law</i> The amendment to the Geothermal and Heat Law, which was subject to much of the collaboration in the heating track in the previous phase(s), is before parliament and will likely be decided on by mid-March. Partners to the SSC have confidence that, because of previous vetting procedures, it will be accepted. If passed, it will provide for a clear initial framework, and a clear mandate for the partner to continue with supporting secondary legislation. If it does not, there are several options outlined in the Policy Options Report (part of Phase 2) and further mitigation would be based on assessing the reasons for the amendment not passing, and evaluating with the partners how impact can be secured without.</p> <p><i>Areas of cooperation have ongoing relevance on the Turkish energy and climate agenda</i> Energy efficiency, district energy and long term energy modelling are currently understood by the Turkish side to be relevant areas to develop to address their challenges, including the green transition but also linking to energy affordability and balance of trade concerns. The SSC address these issues and support topics that MENR is actively developing, which increase the likelihood of the knowledge and capacity building to be used by the partners in an impactful way.</p> <p><i>Periods of discretion pre- and post-elections</i> In general, elections and (re)formation of governments typically require a period of discretion from civil service, and subsequently re-affirmation that the areas of cooperation and implementation of the SSC remains politically relevant and institutionally prioritized, risking slow down of implementation. This could also be the case following the upcoming elections in Türkiye in 2023. This will be mitigated by ongoing and close consultation between partners, monitoring, and adjusting where and if necessary.</p> <p><i>Retaining and embedding capacity building</i></p>

	<p>Knowledge and capacity building in an organization can dissipate and be lost over time, due to staffing changes or lack of use/relevance. This will be mitigated by collecting and compiling as much as possible all information and relevant discussions, to be made available to the participating organisations.</p>
<p>Management set-up</p>	<p>The cooperation is anchored with the Turkish partner – Ministry of Energy and National Resources (MENR).</p> <p>The management set-up is slightly atypical from other SSC frameworks in that strategic dialogue on energy cooperation and overall management of the SSC program rests with two Steering Committees (SC) at Outcome level. Both Steering Committees will be established and co-chaired by the Danish Embassy to Türkiye, Director from the Danish Energy Agency (ENS), and Directors for Department of Energy Efficiency and Environment (D3E) and General Director for General Directorate of Energy Affairs (GDEA) for the Outcome tracks, respectively, and additionally attended by Danish ministries where relevant. The SCs are expected to meet twice per year.</p> <p>The Steering Committee meetings will be accompanied by a joint forum (without decision-making powers) hosted by H.E. the Danish Ambassador to Türkiye, that can further strengthen bilateral relations between the countries. This forum will bring together members of both Steering Committees to allow for exchange on the broader challenges and strategic dialogues that can inform the SSC on Energy between Denmark and Türkiye, and reflection on the potential alignment and synergies between the Outcomes.</p> <p>Project Management Teams will be organised on Outcome level with participation at working level of MENR, DEA, RDE and partner institutions where relevant.</p> <p>DEA will in close cooperation with the Royal Danish Embassy in Ankara, manage the day-to-day implementation of the programme, including preparing material for the Steering Committees.</p> <p>DEA will additionally report to the Strategic Advisory Group with representatives of DEA, KEFM and MFA.</p>
<p>Contributions from Danish Public Authority</p>	<p>DEA will contribute with:</p> <ul style="list-style-type: none"> • Overall project management and administration • Danish government experts, ad hoc liaising with non-governmental experts. • Costs of Danish experts including travel, local transport and accommodation. • Costs for study tours (airfare, hotel, visa, per diem, local transport, on a case by case basis). • Contracting consultancy services for key activities when required. • Costs of special arrangements such as seminars, workshops etc.

Guidelines for Strategic Sector Cooperation 2020, **TEMPLATE 3**

	<ul style="list-style-type: none"> • Drafting project documents. <p>The Embassy of Denmark in Ankara hosts a Sector Advisor:</p> <ul style="list-style-type: none"> • The advisor will be the daily contact to the partners and will drive progress on project activities. • The advisor is supported by an Energy Programme Officer, who will support and facilitate partner contact and project activities. <p>The Sector Advisor will coordinate closely with DEA’s project manager and team.</p>				
Contributions from partner authority	<p>MENR will contribute with:</p> <ul style="list-style-type: none"> • Allocation of staff and experts that matches the Danish deliverables. • Access to relevant institutions, inside and outside MENR. • Access to relevant data, legislation, regulations, practices, procedures and any other necessary information • Support for coordination and logistics • Support for organisation of workshops and seminars <p>Infrastructure and facilities where relevant for presentations and capacity building.</p>				
Budget		2020	2021	2022	Total
		DKK	DKK	DKK	DKK
	Personnel	2.183.015	2.183.015	2.183.015	6.549.044
	Reimbursabel	359.200	359.200	359.200	1.077.600
	Activities	70.000	70.000	70.000	210.000
	Consultancies	462.668	592.336	592.336	1.647.340
	Unallocated funds	140.446	187.785	187.785	516.016
	Grand total	3.215.328	3.392.336	3.392.336	10.000.000

Title: Update and Addition to Background Report for Phase 3, SSC Türkiye

Introduction and purpose

This report objective is to outline the most significant developments that Türkiye has undergone within its energy sector since year 2020, to provide an updated background for the SSC on Energy, in preparation for its 3rd phase. The focus is on the ratification of the Paris agreement and the implications of the energy crisis following the Russian aggression on Ukraine. A brief section on the Turkish economy is included at the end. This report should function as an add-on to the SSC background reports prepared for the SSC phase 2 application, which are outlining in depth the energy sector of Türkiye.

Background

At present, Türkiye has a total electricity generation capacity of 103 GW, making it Europe's fifth and worlds 12th largest country in terms of installed capacity. Renewable energy sources constitute 54% of the generation capacity. The shares of the installed capacity are 30,5% hydro, 24,4% natural gas, %21,1 coal, 11,0% wind, 9,0% solar, 1,6% geothermal, and 2,4% other sources.

Türkiye has a growing demand for energy as a developing country with an increasing population and heavy industries. The security of supply is therefore a persistent first priority of the Turkish Government and the Ministry of Energy and Natural Resources of Türkiye (MENR), casting a shadow on the efforts on combatting climate change. The latest energy crisis has magnified this tendency.

Türkiye is still heavily dependent on imported fossil fuels, which currently represents more than 70% of the energy consumption. This in turn means that energy developments must be seen in the light of balance of trade developments. In the last decade, the Turkish Government has increased its efforts on diversifying its sources of energy imports, increasing the share of renewable energy and indigenous sources in the power production and reducing its energy intensity by energy efficiency measures. These efforts have translated into important progress.

The renewable energy capacity has increased significantly, the wind and solar generation capacity shares in total capacity have increased from 0,1% level in 2002 to 9% and 11% respectively. The energy intensity has decreased nearly 25% compared to year 2000. Türkiye has also been successful in diversifying its sources of imported gas. The Russian Federation was the dominant supplier in 2000's but Türkiye began importing gas from the Republic of Iran in 2001 and from Azerbaijan in 2007, where the ladder has gained an important share together with the LNG imports. Türkiye is continuously increasing its gas import infrastructure and storage facilities to advance energy security. Most recently, Türkiye has initiated efforts to boost domestic oil and gas exploration and production.

Energy crisis and security of supply

The energy crisis has closely followed a currency and inflation crisis that emerged in Türkiye at the end of 2021, which has caused an even bigger effect on the energy prices. The MENR recently confirmed that the energy import costs for Türkiye have increased from 15 bn to 100 bn USD¹ on a yearly basis.

¹ The distinct impacts of the weakened Turkish lira, increased NG prices and increased consumption cannot be assessed at this time.

The natural gas consumption (and energy imports) of Türkiye varies significantly on a yearly basis depending on the weather conditions as well as other factors. The government already began the diversification 20 years ago with some effect, the Russian gas share was 57% in 2011 and decreased to 33% in 2018-2019, but is rising again. The latest annual data shows that the natural gas consumption grew by 24% in 2021 and resulted in 59.854 million Sm³, whereas the Russian share of imports was 26.343 million Sm³ or 45%. The breakdown of the consumption in 2021 was 28% residential, 35% electricity generation and 25% industrial.

Türkiye's priority following the energy crisis has been to satisfy consumer demand, while providing economic support to rising energy prices. The Ministry of Treasury expects to reserve 530 bn TRY/ 28,4 bn USD in the 2023 budget for subsidies to electricity and natural gas consumption. The subsidies covers 80% of the natural gas bills of consumers and 50% of their electricity bill. This provides a potentially important entry point for achieving broader change through energy cooperation, since energy policy is closely linked to social policy.

In terms of security of supply, Türkiye experienced an energy shortage in January 2022, caused by a temporary termination of gas import from Iran, with an explanation of technical problems as the cause. The implications of the temporary energy shortage was that the electricity supply to certain industrial zones in Türkiye was suspended.

Being heavily dependent on imported energy and increasing energy costs has urged the country to explore and produce domestic oil and gas. The Black Sea is considered having a huge gas potential (similar to the North Sea in the 70s), and cooperation with neighbour states is seen important to exploit it. The "Sakarya" gas field discovered in 2020, in the Black Sea is estimated to contain 540 bcm of gas, and is expected to become the fastest gas field in the world in lead-time (2.5 years from discovery to production, expected early next year).

Again, in the context of security of supply and Türkiye's energy dependence, international and regional cooperation becomes crucial for the country, and Türkiye is actively discussing with several additional potential suppliers (e.g. Azarbaijan, Turkmenistan), while at the same time focusing on production, storage and energy efficiency. The Minister for MENR has recently reiterated the call for increased cooperation with the EU, notably with the resumption of the High Level Energy dialogue and the opening of the relevant negotiating chapter.

The MENR confirms that natural gas is considered a "transition" source, on the way to the energy transformation and climate change nexus. While a lot of the focus is on the gas supply and energy prices, other developments are also worth mentioning:

- The Turkish Government is expected to reveal the short-medium-term Energy Plan shortly, which would provide guidance for market operators to decide on their investments, which are currently on hold due to fluctuating prices.
- The Turkish Government has adopted regulations facilitating self-production and grid connections for households. Regulatory changes have also been introduced recently to facilitate the integration of large amount of intermittent sources like solar and wind into the grid, by the means of battery storages. The regulatory changes have received big interest from investors and applications adding up to 50 GW of renewable energy projects is under review. These projects will require installation of storages.

- As part of its energy security strategy, Türkiye recently opened the largest solar panel factory in Europe, which would make the country the third largest producer of panels in the world.
- Türkiye is pushing ahead with the Akkuyu nuclear plant (being built by Rosatom), whose first reactor is scheduled to be commissioned in 2023.
- MENR is following closely new technologies such as 'clean nuclear' (SMRs up to 400 MW modular nuclear reactors), which could significantly shorten development time.

Climate Change Policies of Türkiye

Türkiye ratified the Paris Agreement in October 2021 and the same year, the national net zero emission target was announced for 2053. The Ministry of Environment, Urbanisation and Climate Change (MoEUCC) is the national coordination body for climate actions, leading the national climate efforts. Following the ratification of the Paris Agreement, a number of national processes were initiated to define Turkish climate objectives, action plans and climate legislation. The majority of the initiated processes have been delayed, including the long awaited climate law. Türkiye thus has a publicly announced net zero emission target for 2053, but there is still no (finalized/revealed) plan for reaching this target. The Minister for MoEUCC announced during COP27 in Sharm El Sheik, an updated Nationally Determined Contribution (NDC) target of 41% (relative) GHG² reduction in 2030, which was updated with support from the UNDP. The relative reduction target means that the GHG emissions of Türkiye will peak in 2038.

Independent Turkish climate organizations have expressed disappointment with Türkiye's GHG reduction target and criticized the Government for not being sufficiently ambitious. The updated NDC has generally not attracted much attention. There have been no public statements from the Turkish authorities about the outcome of COP27, which have also not filled the Turkish media image.

The climate agenda is not a high priority for the Turkish Government, and Türkiye is generally lagging behind in an international climate context. In Türkiye, climate considerations must give way to strong economic growth. High inflation and rising prices exacerbate this trend and increase the pressure on the Turkish Government to ensure a stable and cheap energy supply, primarily through relying on imported gas and state subsidized energy prices for consumers. Public awareness of climate action is limited and niche.

Turkish economy

The Turkish economy is progressing in the middle of a currency/inflation and energy crisis. Türkiye experienced a growth in GDP by 11.4% in 2021, while the expected growth in 2022 is at 5%. The OECD expects a 3% growth in 2023, which shows a downward trend, but still a worthy progress at a time of global economic slowdown. There are certainly also red flags, such as the high inflation, low interest rate supported by President Erdogan and weakening of the Turkish Lira.

In October 2022, an 85% increase in the consumer price index and a 150% increase in producer prices were noted on an annual basis. IMF's assessment is that the weakening of the Turkish lira in the autumn 2021, which was supposed to strengthen the competitiveness of Turkish exports, have now been lost due to the high inflation. In addition to the increase in the producer inflation index, the minimum wage has also increased by 81% in 2022.

² Greenhouse gas emissions

The low central bank interest rate, decreased from 19% in autumn 2021 to now 9%, is not the only reason for the weakened lira. Large public spending – ahead of the upcoming presidential and parliamentary elections in 2023 – has also helped boost Turkish consumption, which has contributed to the weakening of the Turkish Lira. Increases in the minimum wage have roughly corresponded to the increase in inflation.

Inflation is expected to fall to 65% by the end of the year, 55% in January 2023 and 50% in February 2023, which is solely due to the higher comparison basis the year before, when Turkish inflation really started to kick in. However, there is no doubt that President Erdogan will use this drop to support his unorthodox policy of lowering interest rates to fight inflation. The independence of the Turkish central bank is widely questioned. It is widely believed that President Erdogan, who has fired three central bank governors since 2019, dictates the monetary policy.

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**Results Framework and Work Plan
(Annual Report)
for
SSC project in energy
between
Denmark and Türkiye, Phase 3
+ Status update December 2022

Heating Track**

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Results Framework and Work Plan for SSC Project in energy between Türkiye and Denmark

Project period: 2020-2022

Updated: 15.12.2022

HEATING: Efficient and low-carbon supply of heating and cooling

According to the management rules for SSC-projects, The Steering Committee is allowed to decide changes in output and output indicators in Project Documents (PD) without prior approval from the Danish Ministry of Foreign Affairs (MFA). Only changes in Main Objective and Outcome needs approval by MFA.

Outputs and output indicators have been revised and presented and approved by the SC-meeting on Heating on 14 March 2022 and hereafter approved in a written process. Objectives and outcome remain unchanged in phase 2.

The final version of this document will be prepared after the project period. N.B: an interim version is provided as an annex to the documentation for Phase 3 application.

<p>OBJECTIVE of SSC project To assist the Turkish Government in developing relevant policies, strategies and solutions to:</p> <ul style="list-style-type: none">• Enable a sustainable development transition of their energy sector.• Achieve the Governments' long-term objectives for energy efficiency and district energy.• Increase the capacity of implementation of the planned new legislation on heat supply.	<p>Status end 2022:</p> <ul style="list-style-type: none">• Achieving. Objective will be continuing in phase 3 (2023 – 2026).
<p>OUTCOME</p> <ul style="list-style-type: none">• The SSC project has provided a strong analytical basis as well as an assessment of potential and needs and also strong capacity to draft and later on implement strengthened legislation for heat supply.	<p>Status end 2022:</p> <ul style="list-style-type: none">• Achieving. Outcome will be changed in phase 3

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OUTPUT 0. Project management and coordination <ul style="list-style-type: none"> The project is managed and coordinated in line with the Project Document and the annual approved Work Plans. 		Status end 2022: <ul style="list-style-type: none"> Activities implemented, following Project Document and the annual approved Work Plan for 2022. 		
Activity	Purpose – content - product	Partners and resources involved	Timing	Status end 2022:
0.1 Ongoing project management and coordination	Purpose <ul style="list-style-type: none"> The Project Management Team (PMT) functions as the daily coordinating stakeholder body. The PMT will coordinate activities in the project, follow up on the progress of the project, prepare documents and reports for meetings etc. Content <ul style="list-style-type: none"> Prepare annual working programs Prepare progress reports Prepare PMT-meetings and minutes Daily Project Management (PMT). Product <ul style="list-style-type: none"> Effective management carried out of the SSC project implementation in accordance to the project document and annual work programs. 	Lead <ul style="list-style-type: none"> Danish Energy Agency (DEA) supported by the Danish Embassy in Ankara (RDE). Involved authorities in partner country <ul style="list-style-type: none"> Department of Energy Efficiency and Environment (D3E)/Turkish Ministry of Energy and Natural Resources. Turkish Energy Market Regulatory Authority (EMRA). 	1Q 2020 – Q4 2022 (throughout Phase 2)	Activity implemented as planned in the Work Programme for 2022. Please note that the SC in March 2022 has approved a number of changes, compared to the signed Project Document in March 2020. See Annex to this document.

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<p>OUTPUT 1. Selected regulation has been drafted.</p> <p>Output 1 indicators</p> <p>1.1. The entire regulatory complex in the form of a primary heat market law together with secondary regulation has been described.</p> <p>1.2. Secondary regulation to be supported by the project in project year 1-3 has been selected.</p> <p>1.3. Selected secondary regulation has been drafted.</p> <p>1.4. Workshops with key stakeholders to provide feedback on draft regulation has been held.</p> <p><u>Decisions:</u></p> <ul style="list-style-type: none"> • It is decided not to work more on output 1 nor any output indicators 1.1. – 1.4. in 2022. • Instead, a new activity: Preparation of a Policy options paper, which also includes options for future regulation, will be initiated under output 4 in 2022. See output 4. 	<p>Status end 2022:</p> <ul style="list-style-type: none"> • MENR has prepared an important suggestion to the existing Geothermal law to become a new “Geothermal and Heat Law”, inspired by the the Danish Heat Supply Law and the work done in phase 1 and phase 2 in the heating track in SSC. • As preparation for further work in phase 3 with policy development prior to development of appropriate regulation, a policy option report for the heating sector has been prepared. The policy option report includes 12 ideas for new heating policies / new regulation, based on Danish experiences with successful policies and legislation for the heating sector. The policy option report was approved at the final PMT-meeting in December 2022. • Support and cooperation in phase 3 regarding policy development and new regulation is expected to take the new law and the ideas in the policy option report as point of departures..
<p>OUTPUT 2. Guidance documents in heating and cooling planning have been drafted.</p>	<p>Status end 2022:</p> <ul style="list-style-type: none"> • Achieved • The report and guidance document “Pilot heat planning in Manisa Metropolitan Municipality and Kütahya Municipality is completed in phase 2, following the 2022 Work Perogram.
<p>Output 2 indicators</p> <p>2.1. Necessary steps in preparing a heat plan has been specified</p> <p>2.2. Synergies and conflicts between heat planning and the electricity sector, the natural gas sector and the cooling sector have been described.</p>	<p>Status end 2022:</p> <ul style="list-style-type: none"> • Achieved..

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<p>2.3. Guidance documents in heat mapping and cost-benefit analyses prepared</p> <p>2.4. Potential geographical areas to be used as examples in, how to prepare steps in heat planning have been identified and prioritised.</p> <p>2.5. Pilot examples in heating and cooling planning have been prepared</p> <p>2.6. Guidance documents in heating and cooling planning, taking advantage from the results from the pilot planning have been drafted.</p>				
Activity	Purpose – content - product	Partners and resources involved	Updated Timing	Status end 2021:
<p>2 Guidance documents in heating and cooling planning</p>	<p>Overall purpose</p> <ul style="list-style-type: none"> • To assist D3E in preparing guidance documents in, how to prepare heating and cooling plans and other guidance documents within the regulations <p>Overall product</p> <ul style="list-style-type: none"> • Drafted guidance documents in heating and cooling planning. Some guidance documents will be prepared prior to implement pilot heat planning in a municipality, some guidance documents will be derived from the results from pilot heat planning. 	<p>Denmark</p> <ul style="list-style-type: none"> • DEA and RDE. <p>Türkiye</p> <ul style="list-style-type: none"> • D3E and EMRA. 	<p>Q1 2020 – Q4 2022.</p>	<ul style="list-style-type: none"> • Two preliminary guidance documents in heating and cooling mapping and cost-benefit analysis have been completed in 2021 prior to the start of the pilot heat planning in municipalities
<p>2.1. Specify necessary steps in preparing a heat plan. Identify synergies and conflicts between heat planning and the</p>	<p>Purpose</p> <ul style="list-style-type: none"> • Specification of the necessary steps in heat planning, and which topics to be covered by guidance documents. 	<p>Denmark</p> <ul style="list-style-type: none"> • DEA and RDE. <p>Türkiye</p> <ul style="list-style-type: none"> • D3E and EMRA. 	<p>Q2 2020</p>	<ul style="list-style-type: none"> • Completed in June 2020.

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<p>electricity sector, the natural gas sector and the cooling sector</p> <p>Prepare TOR for guidance documents in heat planning</p>	<ul style="list-style-type: none"> • Prepare ToR for two guidance documents regarding mapping and cost-benefit analyses. <p>Content</p> <ul style="list-style-type: none"> • DEA to describe the typical steps in a heat plan including topics like mapping and forecasting of heat demand and mapping of existing heat supply, assessment of local energy resources, scenario development, impact assessment of different supply options and zoning. Furthermore, suggest which relevant topics and steps in the planning procedure to be covered by guidance documents. • PMT to review key elements in the Danish heat planning methodology. • In addition, the PMT will prepare ToR for two guidance documents regarding heat mapping and cost-benefit analysis. <p>Product</p> <ul style="list-style-type: none"> • Document describing the generic steps when developing a heat plan and which topics to be handled by guidance documents in heat planning. • Prepared ToR for two guidance documents regarding heat mapping and cost-benefit analyses. 			
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<p>2.2 Assess potential geographical areas</p>	<p>Purpose</p> <ul style="list-style-type: none"> Identify and gather information enabling selection of geographical areas on which to produce a pilot heat plan. <p>Content</p> <ul style="list-style-type: none"> Surveying Türkiye for suitable areas to be considered for producing a pilot heat plan. RDE to lead this activity. <p>Product</p> <ul style="list-style-type: none"> Document describing potential pilot areas to demonstrate typical steps in a heat plan. 	<p>Denmark</p> <ul style="list-style-type: none"> DEA and RDE. <p>Türkiye</p> <ul style="list-style-type: none"> D3E and EMRA. 	<p>Q2 2021</p>	<ul style="list-style-type: none"> Completed in May 2021
<p>2.3 Select geographical area(s) for pilot heat planning</p>	<p>Purpose</p> <ul style="list-style-type: none"> Geographical area to be selected for pilot heat planning. <p>Content</p> <ul style="list-style-type: none"> PMT to select one area in Türkiye best suitable to have pilot heat planning carried out. <p>Product</p> <ul style="list-style-type: none"> Selection of area for pilot heat planning to be produced. 	<p>Denmark</p> <ul style="list-style-type: none"> DEA and RDE. <p>Türkiye</p> <ul style="list-style-type: none"> D3E and EMRA. 	<p>Q2 2021</p>	<ul style="list-style-type: none"> Completed in May 2021. Manisa and Kütahya have been selected as suitable areas for pilot heat planning
<p>2.4 Prepare ToR for consultancy assignment for pilot heat planning</p>	<p>Purpose</p> <ul style="list-style-type: none"> Laying the groundwork for the consultancy assignment of producing a pilot heat plan. <p>Content</p> <ul style="list-style-type: none"> DEA drafting ToR for consultancy assignment. 	<p>Denmark</p> <ul style="list-style-type: none"> DEA and RDE. <p>Türkiye</p> <ul style="list-style-type: none"> D3E and EMRA. 	<p>Q1-Q2 2021</p>	<ul style="list-style-type: none"> Completed in June 2021.

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	<ul style="list-style-type: none"> • Draft ToR discussed in PMT and PMT to agree on final version. • External consultant selected for assignment. <p>Product</p> <ul style="list-style-type: none"> • ToR prepared and consultant selected. 			
<p>2.5 Carry out consultancy assignment for pilot heat planning</p>	<p>Purpose</p> <ul style="list-style-type: none"> • Illustrate how heat planning can be produced in Türkiye. <p>Content</p> <ul style="list-style-type: none"> • PMT coordinating consultancy assignment with external consultant doing pilot heat planning in two municipalities in Türkiye. <p>Product</p> <ul style="list-style-type: none"> • Pilot heat planning reports for two municipalites in Türkiye. 	<p>Denmark</p> <ul style="list-style-type: none"> • DEA and RDE. <p>Türkiye</p> <ul style="list-style-type: none"> • D3E and EMRA. <p>Other</p> <ul style="list-style-type: none"> • External consultant. 	Q3 2021 – Q3 2022	<ul style="list-style-type: none"> • Rambøll selected as consultant for the assignment • Pilot heat planning for Manisa and Kütahya initiated • Activity to be finalized in Q3 2022
<p>2.6 Prepare guidance document(s) derived from pilot heat planning in 2021</p>	<p>Purpose</p> <ul style="list-style-type: none"> • Prepare guidance document's derived from pilot heat planning in 2021. <p>Content</p> <ul style="list-style-type: none"> • Prepare guidance document's derived from pilot heat planning <p>Product</p> <ul style="list-style-type: none"> • On or more guidance documents. 	<p>Denmark</p> <ul style="list-style-type: none"> • DEA and RDE. <p>Türkiye</p> <ul style="list-style-type: none"> • D3E and EMRA. 	Q1-Q3 2022	<ul style="list-style-type: none"> • The consultant has been asked to include guidance in, how to do heat planning in his reporting. Thus, 2.5. and 2.6. will to a large extend be merged.

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<p>OUTPUT 3. Capacity increased to develop the heating and cooling sectors.</p>	<p>Status end 2022:</p> <ul style="list-style-type: none"> Achieved. See approved revisions of PD (annex).
<p>Output 3 indicators</p> <p>3.1. A new Turkish District Heating & Cooling (DHC) association has been capacitated to provide services to its members regarding planning, implementation and operation of DHC systems.</p> <p>3.2. Needs for capacity strengthening activities for key stakeholders have been identified.</p> <p>3.3. Selected capacity strengthening activities, including workshops and training activities have been implemented.</p> <p>3.4. Workshops and site visit for innovative and modern technology application for renewable heat and cold have been held.</p> <p>3.5. Workshop on opportunity of production renewable heat in Türkiye has been held.</p> <p>3.6. (New) A high level study tour to Denmark for national and municipal stakeholders working in the fields of heating sector development has been held</p> <p><u>Decisions:</u></p> <ul style="list-style-type: none"> It is decided not to work more on output indicator no. 1 regarding capacitating a new Turkish District Heating & Cooling (DHC) association in phase 2, since preparatory work in D3E still is ongoing. Indicator no. 1 may be relevant to include in the PD for a possible phase 3. It is decided to leave out indicator no. 5 regarding workshop held in Türkiye, since travel restrictions due to COVID 19 have limited the possibilities for holding workshops in Türkiye. It is decided that capacity strengthening activities (indicator no. 3) includes online training activities regarding district heating, municipal heat planning and GIS-experiences. 	<p>Status end 2022:</p> <ul style="list-style-type: none"> Lessons learned, how a Danish DH-association is working is transferred by DEA. Some initial work has been done by D3E. Since preparatory work in D3E is still ongoing, it is decided to leave out further SSC-assistance in 2022. Output indicator 3.1. may be relevant to include again in a PD for a possible phase 3. An updated training course in District heating and heat planning had been held in September 2021. The course was a virtual course. The target group was the same as the target group for a previous course held in December 2019 in phase 1 plus representatives from local stakeholders in the pilot municipalities. A successful HL study tour to Denmark, focusing on district heating supply and heat planning, has been carried out in August 2022. A training course in GIS is conducted in December 2022. A guidance document in how to prepare district heating tariffs, based on Danish experiences, was approved at the final PMT-meeting in December 2022. An info-book (part 2), compiling a substantial number of memos regarding capacity building and lessons learned, prepared in phase 2, are agreed upon. The info book is planned to be published on MENR website. A similar info book was prepared for memos completed in phase 1.

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<ul style="list-style-type: none"> It is decided to add the following new output indicator: “3.6. A high level study tour to Denmark for national and municipal stakeholders working in the fields of heating sector development has been held”. The study tour will include “Workshops and site visit for innovative and modern technology application for renewable heat and cold” (as outlined in indicator no. 3.4). 				
Activity	Purpose – content - product	Partners and resources involved	Updated Timing	Status end 2021:
3 Capacity increase to develop the heating and cooling sectors	Overall purpose <ul style="list-style-type: none"> To assist key stakeholders in the heating and cooling sectors, incl. a new Turkish district energy association, to increase their capacity in planning, implementation operation and dissemination of district heating and district cooling systems (DHC systems). Overall product <ul style="list-style-type: none"> Performed capacity strengthening activities in the heating and cooling sectors. 	Denmark <ul style="list-style-type: none"> DEA and RDE. Türkiye <ul style="list-style-type: none"> D3E and EMRA. 	Q1 2020 – Q4 2022	<ul style="list-style-type: none"> A number of capacity strengthening activities have been carried out. Capacity strengthening of new Turkish district energy association is cancelled (see above)
3.1 Identify needs for capacity strengthening, existing stakeholders	Purpose <ul style="list-style-type: none"> Identify needs for capacity strengthening activities in DHC. Content <ul style="list-style-type: none"> Interviews and follow-up interviews with existing stakeholders including D3E, EMRA, MoU¹, municipalities, 	Denmark <ul style="list-style-type: none"> DEA and RDE. Türkiye <ul style="list-style-type: none"> D3E and EMRA. 	Q1 2020 – Q4 2022	<ul style="list-style-type: none"> Planned dialogue with players in the heating sector was not possible due to cancelled conferences and workshops (COVID-19). Interviews cancelled due to reprioritization by MENR.

¹ Turkish Ministry of Environment and Urbanisation (MoU)

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	<p>energy supply companies involved in DH development.</p> <ul style="list-style-type: none"> • Survey needs through participation in conferences, workshops and through training activities. <p>Product</p> <ul style="list-style-type: none"> • Memo identifying needs for capacity strengthening activities for existing stakeholders. 			<ul style="list-style-type: none"> • Needs for capacity strengthening activities is instead an ongoing activity. When a need is defined by PMT, it is carefully being discussed, how to address the need by the SSC, and how to implement.
<p>3.2 Describe Danish DH association</p>	<p>Purpose</p> <ul style="list-style-type: none"> • Provide information on the existing Danish DH Association to Turkish key stakeholders. <p>Content</p> <ul style="list-style-type: none"> • Describe the Danish DH Association: <ul style="list-style-type: none"> ○ Year of establishment ○ Historical development ○ Characteristics of current members ○ Mandate ○ Roles and which services the Danish DH Association is providing to their members. <p>Product</p> <ul style="list-style-type: none"> • Memo describing the Danish DH Association. 	<p>Denmark</p> <ul style="list-style-type: none"> • DEA and RDE. <p>Türkiye</p> <ul style="list-style-type: none"> • D3E and EMRA. 	<p>Q1 – Q2 2020</p>	<ul style="list-style-type: none"> • Completed in 2020.
<p>3.3 Identify needs for capacity building, new Turkish DH association.</p>	<p>Purpose</p>	<p>Denmark</p> <ul style="list-style-type: none"> • DEA and RDE. <p>Türkiye</p>		<ul style="list-style-type: none"> • Cancelled, see above.

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	<ul style="list-style-type: none"> To identify needs for capacity building for a new established Turkish DH association. <p>Content</p> <ul style="list-style-type: none"> Identify the needs for capacity building for a new District Energy Association in a Turkish context. Survey needs through participation in conferences, workshops and through training activities. <p>Product</p> <ul style="list-style-type: none"> Memo identifying needs for capacity building of a new District Energy Association in a Turkish context. 	<ul style="list-style-type: none"> D3E and EMRA. 		
<p>3.4 Further develop and conduct “train-the-trainers” course for broader groups than in phase 1.</p>	<p>Purpose</p> <ul style="list-style-type: none"> Increase awareness among key stakeholders of benefits and how to carry out heat planning and cost-benefit analysis on DHC projects. <p>Content</p> <ul style="list-style-type: none"> Further develop and carry out a “train-the-trainers” course on heat planning and cost-benefit analysis. <p>Product</p> <ul style="list-style-type: none"> “Train-the-trainers” course carried out on heat planning and cost-benefit analysis. 	<p>Denmark</p> <ul style="list-style-type: none"> DEA and RDE. <p>Türkiye</p> <ul style="list-style-type: none"> D3E and EMRA. 	Q1 2021-Q3 2022.	<ul style="list-style-type: none"> Completed in September 2021 as online course. Planned to be further developed and repeated in Q3 in 2022.
<p>3.5.</p>	<p>Purpose</p> <ul style="list-style-type: none"> To conduct capacity strengthening activities as defined in 3.1.1. 	<p>Denmark</p> <ul style="list-style-type: none"> DEA and RDE. <p>Türkiye</p>	Q1 2021 – Q4 2022	<ul style="list-style-type: none"> Info Book, part 1, was in 2020 completed and published on MENR website, targeting

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Capacity strengthening activities existing stakeholders.	<p>Content</p> <ul style="list-style-type: none"> • Conduct capacity strengthening activities as defined in 3.1.1. <p>Product</p> <ul style="list-style-type: none"> • Short report, outlining, which activities have been performed. 	<ul style="list-style-type: none"> • D3E and EMRA. 		<p>existing stakeholders, consisting of a number of lessons learned memos and power point presentations, some left over from phase 1.</p> <ul style="list-style-type: none"> • A similar Info Book, part 2, will in 2021 and 2022 be prepared and published on MENR website as part 1.
<p>3.6 Capacity building activities, new Turkish DH association.</p>	<p>Purpose</p> <ul style="list-style-type: none"> • To conduct capacity strengthening activities as defined in 3.1.3. <p>Content</p> <ul style="list-style-type: none"> • Conduct capacity strengthening activities as defined in 2020, e.g. twinning arrangements between Danish District Heating association and new Turkish DH association <p>Product</p> <ul style="list-style-type: none"> • Short report, outlining, which activities have been performed. 	<p>Denmark</p> <ul style="list-style-type: none"> • DEA and RDE. <p>Türkiye</p> <ul style="list-style-type: none"> • D3E and EMRA. 		<ul style="list-style-type: none"> • Cancelled – see above-
<p>3.7. Plan and hold a HL-study tour to Denmark</p>	<p>Purpose</p> <ul style="list-style-type: none"> • To prepare and hold a HL-study tour on district heating and cooling for national and municipal decision makers and for national and municipal experts. <p>Content</p> <ul style="list-style-type: none"> • Identify topics for the study tour and opportunities • Practical planning 			<ul style="list-style-type: none"> • The study tour is planned to be held end August / beginning September.

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	<ul style="list-style-type: none"> • Holding the study tour • Evaluation of the study tour <p>Product</p> <ul style="list-style-type: none"> • Study tour program prepared and implemented • Study tour evaluated 			
<p>OUTPUT 4. Comprehensive assessment of district energy solutions and CHP solutions prepared.</p>		<p>Status end 2022:</p> <ul style="list-style-type: none"> • Achieving • Work carried out as planned – however with some delays due to difficulties with data collection. 		
<p>Output 4 indicators</p> <p>4.1. A comprehensive assessment (in the following called the CA-report), complying with EU regulation and adapted to Turkish circumstance, has been drafted</p> <p>4.2. (New) A policy option paper for how the economic viable potential for district heating in Türkiye can be harvested has been prepared.</p> <p>4.3. An action plan (road map) for, how district heating and cooling (DHC) and combined heat- and power production (CHP) could be rolled out in Türkiye until 2030, has been drafted.</p> <p><u>Decisions:</u></p> <p>5. It is decided to prepare a policy option paper for how the economic viable potential for district heating in Türkiye as identified in the Comprehensive Assessment can be harvested.</p>		<p>Status end 2022:</p> <ul style="list-style-type: none"> • Achieved. The final CA-report was approved at the final PMT-meeting in December 2022. 		

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Activity	Purpose – content - product	Partners and resources involved	Updated Timing	Status end 2021:
<p>4 Comprehensive assessment of district energy and CHP solutions</p>	<p>Purpose</p> <ul style="list-style-type: none"> • To prepare a comprehensive assessment (CA) of, how to include and deploy district heating, district cooling and combined heat and power production in the Turkish energy system. The comprehensive assessment should comply with the EU Energy Efficiency Directive from 2012 with amendments in 2018 (EED). • To prepare a policy option paper for how the economic viable potential for district heating in Türkiye as identified in the Comprehensive Assessment can be harvested. • To prepare an action plan (road map) for, how DHC and CHP could be rolled out in Türkiye until 2030. 	<p>Denmark</p> <ul style="list-style-type: none"> • DEA and RDE. <p>Türkiye</p> <ul style="list-style-type: none"> • D3E and EMRA. 	<p>Q1 2020 – Q2 2022</p>	<ul style="list-style-type: none"> • The Work with the comprehensive assessment continued in 2021 • The comprehensive assessment report will be finalized in Q1-Q2 2022. • The Policy options paper and the action plan will be prepared in Q2 and Q3 in 2022.
<p>4.1 Summarise applied methodologies in Danish comprehensive assessment</p>	<p>Purpose</p> <ul style="list-style-type: none"> • Provide insight into an example of applied methodologies for a comprehensive assessment. <p>Content</p> <ul style="list-style-type: none"> • Produce a summary of the applied methodologies and results of the Danish comprehensive assessment and the background reports, submitted to the EU Commission in December 2015. 	<p>Denmark</p> <ul style="list-style-type: none"> • DEA and RDE. <p>Türkiye</p> <ul style="list-style-type: none"> • D3E and EMRA. 	<p>Q1 2020</p>	<ul style="list-style-type: none"> • Completed as planned. • A power point presentation of the CA from 2015 was presented for the PMT in March 2020.

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	<p>Product</p> <ul style="list-style-type: none"> Description of applied methodologies and results of the Danish comprehensive assessment, submitted to the EU commission in 2015. 			
<p>4.2 Assess, which analyses to be prepared in a Turkish context.</p>	<p>Purpose</p> <ul style="list-style-type: none"> Assist Turkish partners on how to prepare a comprehensive assessment based on Danish examples. <p>Content</p> <ul style="list-style-type: none"> Identify which Turkish analyses can be included in a Turkish comprehensive assessment, following the requirements in EED² (article 14 and annex VIII and IX) <p>Product</p> <ul style="list-style-type: none"> Memo with input to preparation of TOR for the comprehensive assessment to be prepared in a Turkish context (see 4.3). 	<p>Denmark</p> <ul style="list-style-type: none"> DEA and RDE. <p>Türkiye</p> <ul style="list-style-type: none"> D3E and EMRA. 	Q1 2020	<ul style="list-style-type: none"> Completed as planned.
<p>4.3 Prepare ToR for consultancy assignment for Output 4</p>	<p>Purpose</p> <ul style="list-style-type: none"> Assist Turkish partners on how to prepare a comprehensive assessment based on Danish examples. <p>Content</p> <ul style="list-style-type: none"> PMT will develop the ToR for a Turkish comprehensive assessment and engage a consultant to perform the comprehensive assessment. 	<p>Denmark</p> <ul style="list-style-type: none"> DEA and RDE. <p>Türkiye</p> <ul style="list-style-type: none"> D3E and EMRA. <p>Other</p> <ul style="list-style-type: none"> External consultant. 	Q1-Q2 2020	<ul style="list-style-type: none"> Completed as planned.

² EU Energy Efficiency Directive

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	<p>Product</p> <ul style="list-style-type: none"> ToR for a consultancy assignment for a Turkish comprehensive assessment, complying with EU regulation. 			
<p>4.4 Carry out consultancy assignment for Output 4.</p>	<p>Purpose</p> <ul style="list-style-type: none"> Ensure the right outputs from the consultancy assignment <p>Content</p> <ul style="list-style-type: none"> The comprehensive assessment according to the EED has three focus points: <ul style="list-style-type: none"> CHP, DH and DC. The phase 1 results of the SSC regarding output 1 cover to some extent the EU-requirements regarding DH. This is not the case regarding DC and CHP. <p>Product</p> <ul style="list-style-type: none"> Report. Comprehensive assessment of efficient Heating in Türkiye, following the requirements in EU regulation. 	<p>Denmark</p> <ul style="list-style-type: none"> DEA and RDE. <p>Türkiye</p> <ul style="list-style-type: none"> D3E and EMRA. <p>Other</p> <ul style="list-style-type: none"> External consultant. 	<p>Q2 2020- Q2 2022</p>	<ul style="list-style-type: none"> Moving completion of this activity into Q2 2022. Due to difficulties with data collection and need for developing planning methodologies for doing the CA, taking into account data availability, the work has been delayed. It has not been possible due to data constraints to follow all EU-requirements fully. District cooling has only be covered very limited in the work. It has been necessary for DEA to use a large input of man hours in order to assist in the implementation of the CA (besides consultant hours).
<p>4.5. Prepare a policy option paper</p>	<p>Purpose</p> <ul style="list-style-type: none"> Outline policy options for how the economic viable potential for district heating in Türkiye as identified in the Comprehensive Assessment can be harvested. <p>Content</p>		<p>Q2 – Q3 2022</p>	<ul style="list-style-type: none">

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	<ul style="list-style-type: none"> The policy options paper will include lessons learned on, how policy measures has been used in Denmark for large scale deployment of district heating systems and renewable energy and CHP in DH-production from 1980 - 2020. Turkish ideas will be included as well. <p>Product</p> <ul style="list-style-type: none"> A report. 			
4.6 Preparation of road map for DHC development	Content and product will further be specified in the WP for 2022. The road map will feed in to the Ministry's new Energy Efficiency Action Plan, which will be completed in Q4 2022	Denmark <ul style="list-style-type: none"> DEA and RDE. Türkiye <ul style="list-style-type: none"> D3E and EMRA. 	Q3 2022	<ul style="list-style-type: none">

OUTPUT 5. Concrete heating and/or cooling supply projects prepared and/or supported.	Status end 2022: <ul style="list-style-type: none"> Achieved. See approved revisions of PD (annex).
Output 5 indicators <p>5.1. 1-2 feasibility studies for efficient and low-carbon supply of heating and cooling are supported.</p> <p>5.2. Capacity is developed in preparing feasibility studies and business plans.</p> <p>5.3. Conduct assessment report of one selected DH system in Türkiye.</p> <p>5.4. A methodology to benchmark DH systems is created, and support to MENR to write the first DH benchmarking report is provided.</p> <p>5.5. (New) Capacity is developed in project development from project idea to operation.</p>	Status end 2022: <ul style="list-style-type: none"> Achieved. The final guidance document "From Idea to completion", aiming to support development of concrete DH-projects, was approved at the final PMT-meeting in December 2022.. The guidance document is planned to be an inspiration for further assistance to concrete DH-projects in phase 3.

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<p><u>Decisions:</u></p> <ul style="list-style-type: none"> • It is decided to leave out indicator no. 5.1 + 5.2. regarding supporting feasibility studies in phase 2, since a project host for such support is not yet identified. This suggestion was already approved by the SC in March 2021. • It is further decided to leave out indicator no. 5.3 and no. 5.4 in phase 2. Indicator no. 5.1- 5.4. may be relevant to include in the PD for a possible phase 3. • It is suggested to add a new output indicator (5.5.) as follows: “Capacity is developed in project developing of DH - projects, starting with the idea phase and continuing with investigations, design, contracting, all leading to investment decisions?”. This suggestion was already approved by the SC in March 2021. 				
Activity	Purpose – content - product	Partners and resources involved	Timing	Status end 2021:
<p>5 Concrete heating and/or cooling supply projects</p>	<p>Purpose</p> <ul style="list-style-type: none"> • To support that concrete projects for efficient and low-carbon supply of heating and cooling are implemented. • To support that capacity is developed in preparing feasibility studies. • To conduct assessment report of one selected DH system in Türkiye. 	<p>Denmark</p> <ul style="list-style-type: none"> • DEA and RDE. <p>Türkiye</p> <ul style="list-style-type: none"> • D3E and EMRA. 	<p>Q2 2020 – Q4 2022</p>	<ul style="list-style-type: none"> • Activity initiated in 2020 in order to identify a gross list of concrete projects to be supported. However, the focus has changed from working with concrete projects to work generic with project development and project support as described in output indicator 5.5. above.
<p>5.1</p>	<p>Purpose</p>	<p>Denmark</p> <ul style="list-style-type: none"> • DEA and RDE. <p>Türkiye</p>	<p>Q2-Q4 2020</p>	<ul style="list-style-type: none"> • Completed

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<p>Identify ongoing DHC projects in Türkiye (not exhaustive list)</p>	<ul style="list-style-type: none"> • To prepare an overview of ongoing project preparation of DHC-projects in Turkey <p>Content</p> <ul style="list-style-type: none"> • Identify concrete DHC projects, which are currently being planned in Türkiye. <p>Product</p> <ul style="list-style-type: none"> • List and table with key information regarding concrete DH and DC projects, which are currently being planned and implemented in Türkiye. 	<ul style="list-style-type: none"> • D3E and EMRA. 		<ul style="list-style-type: none"> • Preparation of a long list of projects to be supported is initiated.
<p>5.2 To develop capacity in project development from project idea to operation.</p>	<p>Purpose</p> <ul style="list-style-type: none"> • To prepare a guidance document “From idea to implementation” <p>Content</p> <ul style="list-style-type: none"> • The capacity is being increased in D3E by a joint project in PMT, preparing a guidance document in project development “From idea to implementation” <p>Product</p> <ul style="list-style-type: none"> • A guidance document, targeting project developers 	<p>Denmark</p> <ul style="list-style-type: none"> • DEA and RDE. <p>Türkiye</p> <ul style="list-style-type: none"> • D3E and EMRA. 	<p>Q4 2020 – Q3 2022</p>	<ul style="list-style-type: none"> •

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OUTPUT 6 6. Effects of the strategic cooperation results assessed, and results communicated.		Status end 2022: <ul style="list-style-type: none"> • Not achieved yet. • It was decided to postpone the work of this output to 2022 		
Output 6 indicators 7. Effects of the strategic sector cooperation in phase one are assessed, and results are communicated. 8. Effects of the strategic sector cooperation in phase two are assessed, and results are communicated.		Status end 2022: <ul style="list-style-type: none"> • Not achieved yet. It is being considered to initiate communication activities in beginning of phase 3. 		
Activity	Purpose – content - product	Partners and resources involved	Timing	Status 2020:
6 Effects of the SSC results	Purpose <ul style="list-style-type: none"> • To ensure that the effects of the strategic sector cooperation in phase 1 are assessed after completion of phase 1, and results are communicated. • Further to ensure that the effects of the strategic sector cooperation in phase 2 are assessed, and results are communicated within the project period for phase 2. 	Denmark <ul style="list-style-type: none"> • DEA and RDE. Türkiye <ul style="list-style-type: none"> • D3E and EMRA. 	Q1 2021	<ul style="list-style-type: none"> • It was agreed to postpone publishing any potential effects from the SSC project until the completion of the comprehensive assessment which will happen in Q2 2022 – see Outcome 4.
6.1 Assess potential effects of SSC, Phase 1	Purpose <ul style="list-style-type: none"> • To ensure that the effects of the strategic sector cooperation in phase 1 are assessed after completion of phase 1, and results are communicated. Content <ul style="list-style-type: none"> • Assess the potential effects of the activities conducted in phase 1. • A summary of part 2 of the cost-benefit analysis (Output 3 in Phase 1), 	Denmark <ul style="list-style-type: none"> • DEA and RDE. Türkiye <ul style="list-style-type: none"> • D3E and EMRA. 	Q4 2022	<ul style="list-style-type: none"> • It was agreed to postpone publishing any potential effects from the SSC project until the completion of the comprehensive assessment which will happen in Q1 2022 – see Outcome 4.

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	<p>estimating the potential for cost-effective DH deployment and the potential long-term benefits (economic savings and GHG-emission reductions), will be a part of the assessment.</p> <p>Product</p> <ul style="list-style-type: none"> Result story, assessing the potential effects of the activities conducted in Phase 1. 			
<p>6.2 Communicate results from SCC, Phase 2</p>	<p>Purpose</p> <ul style="list-style-type: none"> Further to ensure that the effects of the strategic sector cooperation in phase 2 are assessed, and results are communicated within the project period for phase 2. <p>Content</p> <ul style="list-style-type: none"> Assess the potential effects of the activities conducted in phase 2. <p>Product</p> <ul style="list-style-type: none"> Result story, assessing the potential effects of the activities conducted in Phase 2. 	<p>Denmark</p> <ul style="list-style-type: none"> DEA and RDE. <p>Türkiye</p> <ul style="list-style-type: none"> D3E and EMRA. 	Q4 2022	<ul style="list-style-type: none"> No work on this activity in 2021 – as planned.

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Annex. Revisions of Project Document

According to the management rules for SSC-projects, The Steering Committee is allowed to decide changes in output and output indicators in Project Documents (PD) without prior approval from the Danish Ministry of Foreign Affairs (MFA). Only changes in Main Objective and Outcome needs approval by MFA.

Below, it is suggested, which changes to be made in the Project Document for phase 2. The revisions are approved by the SC in March 2022.

Main objective of SSC project	<p>The objective of the Danish-Turkish SSC project will be to:</p> <p><u>Current text:</u> Assist the Turkish Ministry of Energy and Natural Resources in developing relevant policies, strategies and solutions to enable a sustainable development transition of their energy sector, achieve the governments' long term objectives for energy efficiency and district energy and increase the capacity of implementation of the planned new legislation on heating and cooling.</p> <p><u>Suggestion:</u> No changes are needed.</p>
Outcome	<p><u>Current text:</u> The SSC project has provided a strong analytical basis as well as an assessment of potential and needs and also strong capacity to draft and later on implement strengthened legislation for heating and cooling.</p> <p><u>Suggestion:</u> No changes are needed.</p>
Output 1	Selected regulation has been drafted
Output 1 indicators	<p><u>Current text:</u></p> <ul style="list-style-type: none"> • The entire regulatory complex in the form of a primary heat market law together with secondary regulation has been described. • Secondary regulation to be supported by the project in project year 1-3 has been selected.

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	<ul style="list-style-type: none"> • Selected secondary regulation has been drafted. • Workshops with key stakeholders to provide feedback on draft regulation has been held. <p><u>Suggestion:</u></p> <ul style="list-style-type: none"> • It is suggested to delete Output 1 and all output 1 indicators. Due to uncertainty of needs for assistance to future regulation, only limited activities related to output 1 are carried out. • Policy options for future regulation will in stead be handled under output 4. See below.
Output 2	Guidance documents in heating and cooling planning have been drafted
Output 2 indicators	<p><u>Current text:</u></p> <ul style="list-style-type: none"> • Necessary steps in preparing a heat plan has been specified and synergies and conflicts between heat planning and the electricity sector, the natural gas sector and the cooling sector have been described. • Potential geographical areas to be used as examples in, how to prepare steps in heat planning have been identified and prioritised. • Pilot examples in heating and cooling planning have been prepared. • Guidance documents in heating and cooling planning, taking advantage from the pilot planning, renewable heat legislation and application in EU have been drafted. <p><u>Suggestion:</u> No changes are needed.</p>

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Output 3	Capacity increased to develop the heating and cooling sectors
Output 3. indicators	<p><u>Current text:</u></p> <ul style="list-style-type: none"> • A new Turkish District Heating & Cooling (DHC) association has been capacitated to provide services to its members regarding planning, implementation and operation of DHC systems. • Needs for capacity strengthening activities for key stakeholders have been identified. • Selected capacity strengthening activities, including workshops and training activities have been implemented. • Workshops and site visit for innovative and modern technology application for renewable heat and cold have been held. • Workshop on opportunity of production renewable heat in Türkiye has been held. <p><u>Suggestions:</u></p> <ul style="list-style-type: none"> • It is suggested to leave out indicator no. 1 regarding capacitating a new Turkish District Heating & Cooling (DHC) association in phase 2, since preparatory work in D3E still is ongoing. Indicator no. 1 may be relevant to include in the PD for a possible phase 3. • It is suggested to leave out indicator no. 5 regarding workshop held in Türkiye, since travel restrictions due to COVID 19 have limited the possibilities for holding workshops in Türkiye. • It is suggested to add that capacity strengthening activities (indicator no. 3) includes online training activities regarding district heating, municipal heat planning and GIS-experiences. <p>It is suggested to add the following new output indicator:</p> <ul style="list-style-type: none"> • A high level study tour to Denmark for national and municipal stakeholders working in the fields of heating sector

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	development has been held. The study tour will include “Workshops and site visit for innovative and modern technology application for renewable heat and cold” (as outlined in indicator no. 4).
Output 4	Comprehensive assessment of district energy solutions and CHP solutions prepared
Output 4 indicators	<p><u>Current text:</u></p> <ul style="list-style-type: none"> • A comprehensive assessment of DHC solutions and CHP solutions, complying with EU regulation and adapted to Turkish circumstance, has been drafted. • An action plan (road map) for, how district heating and district cooling (DHC) and combined heat- and power production (CHP) could be rolled out in Türkiye until 2030, has been drafted. <p>It is suggested to add the following new indicator no. 2, situated in a chronological order between indicator no. 1 and 3:</p> <ul style="list-style-type: none"> • A policy option paper for how the economic viable potential for district heating in Türkiye can be harvested has been prepared. This will include lessons learned on, how policy measures has been used in Denmark for deployment of district heating systems and renewable energy and CHP in DH-production. <p>It should be mentioned that main focus due to data availability has been on the heating sector.</p>
Output 5	Concrete heating and/or cooling supply projects prepared and/or supported
Output 5 indicators	<u>Text in original PD:</u>

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	<ul style="list-style-type: none"> • Supporting 1-2 feasibility studies for efficient and low-carbon supply of heating and cooling are supported. • Capacity is developed during the preparation of the feasibility study/ies. • Conduct assessment report of one selected DH system in Türkiye. • A methodology to benchmark DH systems is created, and support to MENR to write the first DH benchmarking report is provided. <p><u>Suggestions:</u></p> <ul style="list-style-type: none"> • It is suggested to leave out indicator no. 1 + 2 regarding supporting feasibility studies in phase 2, since a project host for such support is not yet identified. This suggestion was already approved by the SC in March 2021. • It is further suggested to leave out indicator no. 3 and no. 4 in phase 2. Indicator no. 1-4 may be relevant to include in the PD for a possible phase 3. • It is suggested to add a new indicator under output 5 as follows: “Capacity is developed in project developing of DH - projects, starting with the idea phase and continuing with investigations, design, contracting, all leading to investment decisions?”. This suggestion was already approved by the SC in March 2021.
Output 6	Effects of the strategic sector cooperation results assessed, and results communicated
Output 6. indicators	<p><u>Current text:</u></p> <ul style="list-style-type: none"> • Effects of the strategic sector cooperation in phase one are assessed, and results are communicated. • Effects of the strategic sector cooperation in phase two are assessed, and results are communicated.

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	<p><u>Suggestions:</u></p> <ul style="list-style-type: none">• It is suggested to leave out indicator no. 1, since the PMT has concluded that results from the cost-benefit analyses report in phase 1 were too uncertain to be communicated. Instead, the results from the comprehensive assessment report can be included as input to achieve output indicator 2.
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- It is suggested to leave out indicator no. 1, since the PMT has concluded that results from the cost-benefit analyses report in phase 1 were too uncertain to be communicated. Instead, the results from the comprehensive assessment report can be included as input to achieve output indicator 2.

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TEMPLATE 5A: Distribution of Activities/Workdays

Country: Sector: MFA File No. : 201X-XXXX

	2023				2024				2025				2023	2024	2025	Total
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Outcome A: Heating and cooling																
Output A.1: Integrated national and municipal heat planning	25	30	25	25	25	30	25	20	25	20	15	10	105	100	70	275
Output A.2: Mapping and data	20	25	25	25	25	25	25	25	25	25	25	25	95	100	100	295
Output A.3: Policy exchange and development	15	20	20	15	20	20	15	15	20	25	25	30	70	70	100	240
Total Output	60	75	70	65	70	75	65	60	70	70	65	65	270	270	270	810
Outcome B: Energy modelling and long-term planning																
Output B.1: Development of energy models	25	25	30	25	30	30	20	15	20	20	15	15	105	95	70	270
Output B.2: Capacity building for scenarios	25	25	25	25	30	25	25	25	25	25	25	25	100	105	100	305
Output B.3: Modelling for policy development	15	20	15	15	20	20	15	15	25	25	20	30	65	70	100	235
Total Output	65	70	70	65	80	75	60	55	70	70	60	70	270	270	270	810
Total alle Outputs	125	145	140	130	150	150	125	115	140	140	125	135	540	540	540	1620

TEMPLATE 5.B: Distribution of Human Resources from Danish Authorities and Fee Budget

Country: Sector: MFA File No. : 201X-XXXX

Human Resources (days)		2023		2024		2025		Total working days				
Human Ressource	DK Public Authority	TWP, days**	in DK, days	TWP, days**	in DK, days	TWP, days**	in DK, days	TWP	in DK	Total		
DEA Staff		270	270	270	270	270	270	810	810	1620		
								0	0	0		
								0	0	0		
								0	0	0		
								0	0	0		
								0	0	0		
								0	0	0		
								0	0	0		
								0	0	0		
								0	0	0		
Total		270	270	270	270	270	270	810	810	1620		
Total workdays - from Annex B.1, must be equal to TWP + in DK days		●	540	●	540	●	540	●	50%	●	50%	100%

TEMPLATE 5.D: Capacity Development

Country: Sector: MFA File No. : 201X-XXXX

Activities	2023			Units
	Units	Rate DKK	Total	
Exchange visits	1	70.000	70.000	1
			0	
			0	
			0	
			0	
			0	
			0	
			0	
			0	
			0	
			0	
			0	
			0	
			0	
			0	
			0	
			0	
			0	
Total			70.000	

Template 5.E: Consultancies

Country: Sector: MFA File No. : 201X-XXXX

Consultants	2023		
	Units	Rate DKK	Total
District heating consultants: daily rates	25	7.600	190.000
District heating consultants: travel per diems	8	1.271	
District heating consultants: flights	2	4.000	8.000
Energy planning and modelling consultants: senior daily rates	17	8.500	144.500
Energy planning and modelling consultants: junior daily rates	17	6.000	102.000
Energy planning and modelling: travel per diems	8	1.271	10.168
Energy planning and modelling: flights	2	4.000	8.000
			0
			0
			0
			0
			0
			0
			0
			0
			0
			0
			0
			0
Total			462.668

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2024			2025			Total
Units	Rate DKK	Total	Units	Rate DKK	Total	
35	7.600	266.000	35	7.600	266.000	722.000
8	1.271	10.168	8	1.271	10.168	20.336
2	4.000	8.000	2	4.000	8.000	24.000
20	8.500	170.000	20	8.500	170.000	484.500
20	6.000	120.000	20	6.000	120.000	342.000
8	1.271	10.168	8	1.271	10.168	30.504
2	4.000	8.000	2	4.000	8.000	24.000
		0			0	-
		0			0	-
		0			0	-
		0			0	-
		0			0	-
		0			0	-
		0			0	-
		0			0	-
		0			0	-
		0			0	-
		0			0	-
		0			0	-
		592.336			592.336	1.647.340

Template 5.F: Total budget

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Country: Sector: MFA File No. : : 2023-1288

MFA Grant

	2023	2024	2025	Total	
	DKK	DKK	DKK	DKK	% of grand total
Personnel – Danish Authority	2.183.015	2.183.015	2.183.015	6.549.044	65,5%
Reimbursable costs for Danish Authority Staff	359.200	359.200	359.200	1.077.600	10,8%
Activities, including Capacity development	70.000	70.000	70.000	210.000	2,1%
Consultancies (max 30% of grand total)	462.668	592.336	592.336	1.647.340	16,5%
Unallocated funds (max. 20% of grand total)	140.446	187.785	187.785	516.016	5,2%
Grand total	3.215.328	3.392.336	3.392.336	10.000.000	100%

Not applicat

Share paid by Danish authority

	2023	2024	2025	Total	
	DKK	DKK	DKK	DKK	% of total personnel
Personnel – Danish Authority	242.557	242.557	242.557	727.672	10,0%

ANNEX 9: QUALITY ASSURANCE CHECKLIST¹

File number/F2 reference: **2023-1288**

Programme/Project name: **Strategic Sector Cooperation in the energy sector**

Programme/Project period: **2023 – 2025**

Budget: **DKK 10 million**

Presentation of quality assurance process:

The preparation of Phase I projects under the Strategic Sector Cooperation Facility follows the SSC guidelines. The preparation and decision making process consist of three steps: 1) A DEA consultation with ministry of Foreign Affairs (MFA)/GDK and the embassy which entails an assessment of lessons learned during phase II and strategic choices for phase III 2) Preparation of the required project document, annual work plans, budget and an updated background study, which includes a context analysis and a basic base line assessment. Prior to the official submission of the signed project document a quality assessment dialogue takes place between the MFA/GDK and the Danish authority, 3) Approval of the project document, which is signed by the local and Danish partner. The MFA/GDK validates that the required information and analysis is included as per the SSC guidelines. The project has an accumulated total value of more than 10 million DKK and is approved by the Minister for Development Cooperation and Global Climate Policy.

☒ The design of the programme/project has been appraised by someone independent who has not been involved in the development of the programme/project.

Comments: NA and according to the SSC guidelines. The project has been reviewed internally in GDK by a college not involved in the cooperation with the Danish Energy Agency.

☒ The recommendations of the appraisal has been reflected upon in the final design of the programme/project.

Comments: The comments from the internal GDK review has been reflected in the project document.

☒ The programme/project complies with Danida policies and Aid Management Guidelines, including the fundamental principles of Doing Development Differently.

Comments: The project complies with the Guidelines for Strategic Sector Cooperation. The SSC guidelines draw on the overall principles and concepts of the Aid Management Guidelines.

☒ The programme/project addresses relevant challenges and provides adequate responses.

¹ This Quality Assurance Checklist should be used by the responsible MFA unit to document the quality assurance process of appropriations, where development specialists from either ELQ or other units are not involved in the process; i.e. (i) internal appraisal of appropriations up to DKK 10 Million; (ii) external appraisals of appropriations between DKK 10 – 39 million and (iii) appraisal in exceptional cases. The checklist aims to help the responsible MFA unit ensure that key questions regarding the quality of the programme/project are asked and that the answers to these questions are properly documented and communicated to the approving authority.

Comments: yes – the project is a continuation of the sector cooperation between Türkiye and Denmark, which started in 2015. Long term focus on regulations and policies on district heating continues.

Issues related to HRBA, LNOB, Gender, Youth, Climate Change, Green Growth and Environment have been addressed sufficiently in relation to content of the project/programme.

Comments: The green transition of the energy sector and climate is the main development goal of the project. Indirect impact on HRBA, Gender and youth. A possible targeted impact on LNOB if the project succeed in piloting the district heating process with social housing in the provinces.

Comments from the Danida Programme Committee have been addressed (if applicable).

Comments: N.A

X The programme/project outcome(s) are found to be sustainable and in line with the partner's development policies and strategies. Implementation modalities are well described and justified.

Comments: Yes. The project has contributed to the proposal for a new law on district heating and in the last and 3. phase the project will assist and advice on the implementation of the law and secondary regulations developed.

The theory of change, results framework, indicators and monitoring framework of the programme/project provide an adequate basis for monitoring results and outcome.

Comments: Yes.

The programme/project is found sound budget-wise.

Comments: Yes

The programme/project is found realistic in its time-schedule.

Comments: Yes – the project is designed as a flexible instrument for cooperation with the energy partners in Turkey.

Other donors involved in the same programme/project have been consulted, and possible harmonised common procedures for funding and monitoring have been explored.

Comments: During project implementation of phase 1+2 the DEA has coordinated with relevant partners.

Key programme/project stakeholders have been identified, the choice of partner has been justified and criteria for selection have been documented.

Comments: The partners to the project is ministries and agencies that due to their mandate are natural partners to a government- to government cooperation.

X The implementing partner(s) is/are found to have the capacity to properly manage, implement and report on the funds for the programme/project and lines of management responsibility are clear.

Comments: the Danish Energy Agency has for year's implemented projects for development cooperation and has a strong track record demonstrating the capacity to manage, implement and report on projects – and to adjust and develop when need be.

X Implementing partner(s) has/have been informed about Denmark's zero-tolerance policies towards (i) Anti-corruption; (ii) Child labour; (iii) Sexual exploitation, abuse and harassment (SEAH); and, (iv) Anti-terrorism.

Comments: Yes

Risks involved have been considered and risk management integrated in the programme/project document.

Comments: Yes

In conclusion, the programme/project can be recommended for approval: *yes*

Date and signature of Desk Officer: Lone Bøge Jensen

Date and signature of QA colleague: Fin Poulsen