

Terms of Reference for
“Innovative and transformative energy service models for energy service providers”
SHURA Energy Transition Center

1. Background

Turkey’s power system is facing a rapid transformation of the way we produce, supply, and consume energy, driven by renewable energy and energy efficiency. There are three main pillars to define the transformation’s current trends: (a) electrification, such as heating/cooling and charging of electric vehicles (EVs); (b) distributed energy resources (DERs), such as rooftop solar photovoltaic (PV) systems coupled with behind the meter energy storage; (c) energy efficiency and demand management, enabled by smart homes, storage and smart appliances.

The role of energy consumers is becoming more important for the energy system to drive the energy transition, because they do not only consume electricity but contribute to improving whole system efficiency through demand management, creating new flexible electricity demand through electrification and generating their own electricity and contributing to grid services. In order to get benefits from demand side participation, aggregation option and energy communities are helping the consumers to be part of energy transition.

Even if digitalisation, data management platforms and intelligent communication tools play the important role to manage these three pillars, at the same time, there is a need to understand how and where support will be needed for the integration and adoption of business models by groups of consumers, utilities, energy companies and energy service providers. With this transformation, the utilities, energy companies and energy service providers are delivering value to customers with different needs, who want to use electricity in different ways and sometimes offer value back to them, thus moving away from purely selling electricity to providing a broader range of services.

This shift creates opportunities for all actors of the system, including consumers in terms of both energy-based and non-energy based benefits. Understanding the innovative and transformative energy service models and new business opportunities to create new revenue streams will be crucial for energy service providers. While business models predominantly aim for creating new revenue streams, they also need to embed the needs of consumers and provide them with opportunities such as energy communities so they can contribute to the transformation. The impacts of business models on the different stakeholders such as DSOs, consumers etc. will be important to understand shaping energy transition. Thus, it is necessary to a) understand innovative energy service models together with b) non-energy benefits of business models, and c) to identify the role of consumers and the impacts of new business models on consumers.

2. Objective, policy goals and tasks

The aim of the study is to understand possible business models to create new revenue streams for energy service providers and the impacts on the energy transition taking into account both energy and non-energy-based benefits for consumers. The project will also identify ways to overcome the regulatory, policy and financial barriers to the deployment and diffusion of transformative business models.

The current links about the above-mentioned energy transition policies are:

- Energy efficiency and demand side participation are regarded as important policy links for energy transition.
- Contributing to further strengthening the flexibility of the power system in line with Turkey's 11th Development Plan.
- Contributing to increasing energy efficiency in line with and beyond Turkey's National Energy Efficiency Action Plan (NEEAP) 2017-2023 that is in force since March 2018.
- Contributing to increasing distributed renewable energy generation for self-consumption in line with Turkey's 11th Development Plan.

Keeping these interlinked targets and policy objectives in mind, the project is planned to be carried out through the following tasks:

Task 1: Pre-study Stakeholder Engagement

Prior to the research engagement with stakeholders such as energy service companies (ESCOs), distribution system operators (DSOs), suppliers and association of consumers will be carried out to understand the current energy service models in Turkey and the targets for its transformation. This is needed to understand the path of transformation and assess the opportunities to support this transformation.

Task 2: Assessing the current landscape of business models based on priorities and barriers of actors in Turkey

This task will provide an assessment of the current business models of existing energy service providers in Turkey and assess relevant priorities and policy issues related to the actors in terms of energy efficiency, DERs, EV charging, demand response and other energy services.

Energy services will be characterized and described in terms of the scope, objective, impacts, benefits, aspects concerning the power market and legal issues and how they are linked with digitalization which allows empowering consumers by better utilizing their consumption and generation capacities to generate additional incomes through the business models.

Task 3: Review of the international experience related to innovative and transformative energy service models for energy service providers in terms of consumers benefits, technologies, priorities, barriers and business models.

This task will analyse international experience related to innovative and transformative energy service models for energy service providers creating consumer benefits (both energy-based and non-energy-based) and new revenue streams. Providing non-energy benefits to customers are becoming important as they influence the final revenue of the energy service providers. There are four steps involved in this task:

- 1) First, we will collect a range of examples and distill them into a list of typical business models. Our focus will be particularly on business models that combine one or more of the energy services (EV charging, energy efficiency, DERs etc.) by energy service providers in the different countries.
- 2) Second, for each type of business model we will identify the revenue streams and both energy and non-energy-based benefits for consumers. We will assess additionally the extent to which the

business models contribute to a more efficient energy system management. This analysis will be largely qualitative complemented by using quantitative data where readily available.

- 3) Third, for each business model we will identify the drivers and barriers that can accelerate or hamper their deployment.
- 4) Finally, we will assess the key design features of each business model.

This analysis will then form the basis for developing policy recommendations for Turkey.

Task 4: Development of new and upgraded business models based on the gaps between the current landscape and the best practices related to innovative and transformative energy service models

This task will develop a clear understanding of potential new energy service providers and business models applicable to Turkey. The analysis will be based on identified the existing situation in Turkey including the priorities of various stakeholders, barriers and opportunities (Task 2) and the identified innovative business models based on international experience (Task 3). We will specifically compare the current regulatory and market situation in Turkey today with the drivers for best practices identified in Task 3.3. Based on our experience with and analysis of the Turkish wholesale and retail market framework, we can put forward areas for improvement that would better support the development of innovative energy services in Turkey. This will allow us to distinguish between what is already possible today and what the potential is provided beneficial improvements are implemented.

This will ensure that our policy recommendations are realistic and implementable in the Turkish power system. We will engage selected stakeholders in exploring whether our proposals are likely to get traction. The study results will also address how to scale up the selected business models.

These recommendations for design and implementation will be formulated for policymakers and other stakeholders in Turkey. This practical guide will support policy framework for the regulatory, legal, financial, societal, economic and environment issues.

Task 5: Preparing technical and policy maker friendly reports

Finally, the project team will prepare reports including dedicated material for policy makers that demonstrate the innovative and transformative energy service models for energy service providers.

3. Deliverables and timeline

Deliverables	Timeline
Project starts (process related to contracting the consultant starts)	July 2021
Task 1: Pre-study Stakeholder Engagement	July 2021
Task 2: Assessing the current landscape of business models based on priorities and barriers of actors in Turkey	July-August 2021
Task 3: Review of the international experience related to innovative and transformative energy service models for energy service providers in terms of consumers benefits, technologies, priorities, barriers and business models.	July - October 2021

Tasks 4: Development of new and upgraded business models based on the gaps between the current landscape and international experience related to innovative and transformative energy service models	October- November2021
Review of Task 3&4: Through involvements of selected stakeholders from the private and public sectors	October – November 2021
Tasks 5: Final version of the report, detailed and well-structured of the improvements, along with a slide deck and a set of infographics with their content to be agreed with the SHURA team	November- December 2021

4. Key research questions

- What are the roles of energy service providers in the energy transition?
 - Understanding the importance of energy service providers and its innovative service models to accelerate energy transition.
- What are the potential opportunities and benefits for consumers, ESCOs and energy companies?
 - Energy based benefits
 - Non-energy benefits
 - New revenue streams for the actors
- How can those benefits be leveraged through innovative and transformative energy service models?
 - Examples from other countries
- What does this mean for Turkey?
 - Finding out the innovative and transformative energy service models and new business opportunities to create new revenue streams for energy service providers shaping the energy transition in Turkey
 - Identify energy market and regulatory improvements that can unlock potential energy service business models in Turkey

Key messages:

- Energy consumers are becoming central to the energy system to drive energy transition.
- Digitalization, data management platforms and intelligent communication tools play the crucial role.
- The ongoing transformation to a more efficient and more complex grid means that energy service providers’ business models are changing

Understanding innovative energy services and new business opportunities will be crucial.

5. Qualifications

The consultant must be a firm or a group of firms with project experience in:

- Thorough understanding energy service models, energy efficiency and demand management, electrification, distributed energy resources, digitalisation and power system transformation, their technology, business models, flexibility methods, market needs, and their system-wide and value chain impacts,
- Engagement with stakeholders from Turkey's energy sector, including various public sector actors (e.g. Ministry of Energy and Natural Resources), private sector (e.g. suppliers, ESCOs, distribution companies, aggregators) and civil society (e.g. Consumer associations).

Firm's team members should have the following minimum key expertise:

- One or more Team Leader(s), with preferably at least 15 years of professional experience in
 - o Turkey's energy sector and of other key countries, good knowledge in electricity market and/or energy service concepts covering areas from policy, regulation to operational level
 - o Proven record in drafting policy-maker friendly report in Turkish energy sector
 - o Fluency in both Turkish and English
- Expert(s) and preferably a project team, fluent in English and Turkish, with preferably at least 4 years of professional experience and knowledge in
 - o Energy efficiency and demand management, renewable energy technologies, strategy and approaches, energy service models, flexibility, innovation, advanced analytics, digitalisation

The consultant's qualifications should be demonstrated by solid experience, previous work and the proposal that will be submitted as part of the tender offer for the consultancy. The proposal to be submitted as part of the tender offer should clearly state and elaborate the methodology and types of background data to be used in the study and include information regarding the qualifications stated above.