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# Technical Assistance for Improvement of Performance-Based Tariff Regulation of EMRA For Turkish Energy Markets Through Introducing an Enhanced Monitoring System



## Task 3.4 – Best Practices Regarding Innovation and Recommendations for Gas Distribution and Transmission Companies

Training

26<sup>th</sup> August 2020, EMRA, Ankara





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# Agenda

- ❖ Regulatory Practices and TSO Innovation Activities in Turkey
- ❖ Summary of recommendations
- ❖ National Innovation Masterplan





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# Regulatory Practices and TSO Innovation Activities in Turkey





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## Regulatory practices on TSO Innovation Activities in Turkey

- BOTAŞ, unique natural gas transmission operator in Turkey, operates only in transportation of crude oil through pipelines, has engaged in natural gas transportation and trade activities with the aim of meeting the increasing energy demand of Turkey.
- The Article 14.4 of the “Principles and Procedures for Determining the Revenue Caps to be taken as basis to the Tariffs of Natural Gas Transmission License Holding Companies” is related with the R&D, certification and training expenses of the gas transmission system operator.
- **“The maximum 1 % of the regulated operational expense of the transmission system operator can be allocated for the costs related with research and development, certification and training. Such costs are included for the determination of the revenue cap.”**





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## TSO Innovation Activities in Turkey

- Ministry of Energy and Natural Resources (MENR) has set certain **purpose and targets** in its 2019-2023 strategic plan **document**. Among those the following are directly related with the TSO:
  - Commissioning of a new “**National SCADA System**”
  - Pilot implementation for **demand side participation in natural gas pipeline**.
- Beside internal funding of energy efficiency and sustainability projects and R&D activities, **Turkish gas transmission sector has received support under CEF program for cross-border TANAP project**. Some of the innovation projects where Turkey is involved are listed as follows:
  - Environmental monitoring
  - Detailed Engineering for Pipeline Security System (PSS)
  - Engineering studies for TANAP SCADA System and Crossings under Dardanelle Strait and Evros River
  - Design of Commercial Operations and Asset Integrity Management Systems





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# Summary of Recommendations





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## Recommendation I

Recommendation	Explanation	Supportive Arguments	Key stakeholders involved
<p><i>Clearly define the overall objectives of gas TSOs' innovation activities</i></p>	<p>It is recommendable to establish a set of <b>general objectives driving innovation efforts of BOTAS</b></p> <p>Our proposal is to classify innovation activities under each of the following three final objectives:</p> <ul style="list-style-type: none"> <li>a) Value creation for customers.</li> <li>b) Carbon savings and environmental benefits.</li> <li>c) Knowledge transfers and new technologies dissemination.</li> </ul> <p>These objectives shall be used as the overall criteria to assess which projects are eligible to receive innovation incentives.</p>	<p>In most of European cases analysed, <b>innovation regulation includes the general objective pursued.</b></p> <p>The evaluation criteria of each country is implemented taking into consideration <b>whether candidate projects contribute to the achievement of the general objectives.</b></p>	<p>Government, EMRA and BOTAS</p>





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## Recommendation II

Recommendation	Explanation	Supportive Arguments	Key stakeholders involved
<p><i>Develop and update periodically the list of innovation areas.</i></p> <p><i>The list of innovation areas for eligible projects must be flexible.</i></p>	<p>There are several areas for innovation in gas transmission activities.</p> <p>Innovation priority areas shall be aligned with national energy planning goals (in any) but the specific proposals for innovation projects/areas should come from BOTAS.</p> <p>BOTAS is expected to be aware of the state of the art of gas network innovation and also which features of gas transmission activities may be upgraded with innovative solutions.</p> <p>EMRA and R&amp;D institutes shall also be allowed to propose priority areas for innovation.</p>	<p>European NRAs establish which TSOs' expenditures are allowed as R&amp;D expenditures classified under different areas for innovation.</p>	<p>Government, EMRA BOTAS and R&amp;D institutes.</p>





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## Recommendation III

Recommendation	Explanation	Supportive Arguments	Stakeholders
<p><i>Include innovation incentives as part of the allowed OPEX</i></p> <p><i>Allowed innovation OPEX set by EMRA upon proposal of BOTAS.</i></p> <p><i>Allowed R&amp;D OPEX should not be fixed in advance but our recommendation is to target a yearly allowed R&amp;D expenditure around 1% of revenue.</i></p>	<p>For each regulatory period, BOTAS shall propose a trajectory for R&amp;D and Innovation expenditures including</p> <ul style="list-style-type: none"> <li>- Project description and budget of specific R&amp;D projects.</li> <li>- General R&amp;D expenditure allocated by topic (e.g. biogas or digitalization).</li> </ul> <p>EMRA will assess the proposed budget and accept/reduce the proposed costs to set final allowed revenues. Our recommendations is to evaluate the proposal with external support (e.g. advisors).</p> <p>We recommend targeting a yearly R&amp;D budget of around 2% of total TSO OPEX (defined as up to 1% of OPEX in the effective regulation for BOTAS). At the end of each regulatory period a financial reconciliation must take place.</p>	<p>We think OPEX based solutions for funding R&amp;D expenditures are the best alternative. In most countries analysed, innovation incentives are included as allowed OPEX of the TSOs</p> <p>CAPEX based alternatives lead to problems related to RAB and depreciation policy that may be hard to overcome.</p> <p>OPEX based solutions for innovation incentives are the alternative identified as best practice in a recent report of the European Commission (2019).</p> <p>1% of total revenue for R&amp;D expenditures is an international benchmark (which roughly corresponds to 2% of OPEX): 0.8% of total revenue (UK), 1.2% of total revenue (France), 2% of total revenue (Ireland), 1% of total revenue (Finland).</p>	<p>EMRA and BOTAS</p>





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## Recommendation IV

Recommendation	Explanation	Supportive Arguments	Key stakeholders involved
<p><i>Upon proposal of BOTAS, EMRA shall evaluate which innovation projects and R&amp;D expenditures can be included in the allowed OPEX</i></p>	<p>EMRA shall evaluate proposed R&amp;D expenditures of BOTAS with three criteria:</p> <ol style="list-style-type: none"> <li><b>Innovation area.</b> Is the proposed project or R&amp;D expenditure related to one of the priority areas?</li> <li><b>Technical evaluation.</b> Is the project innovative? Is the project feasible? (external support is recommendable).</li> <li><b>Financial evaluation.</b> Is the proposed budget reasonable? Considering the lack of historical expenditures at national level it may be hard to assess this, international benchmark could be an option (external support is recommendable).</li> </ol>	<p>The proposed evaluation matrix is <b>aligned with evaluation criteria of EU NRAs.</b></p> <p>European NRAs usually engage external assistance for the evaluation of R&amp;D projects.</p>	<p>EMRA and BOTAS</p>





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## Recommendation V

Recommendation	Explanation	Supportive Arguments	Key stakeholders involved
<p><i>Yearly reporting of R&amp;D expenditures</i></p>	<p>Each year, BOTAS shall send to EMRA a report presenting:</p> <ul style="list-style-type: none"> <li>- <b>Status of ongoing R&amp;D projects and investigations:</b> objective, budget, partners, expected output, etc.</li> <li>- <b>Review of finished projects:</b> objective, budget, partners, project results, etc.</li> </ul> <p>These reports will help EMRA in two ways:</p> <ul style="list-style-type: none"> <li>- <b>Monitoring BOTAS R&amp;D expenditures.</b></li> <li>- <b>Knowledge dissemination.</b> These reports must be published in both BOTAS and EMRA website.</li> </ul>	<p>In all countries analysed, TSOs must comply with reporting obligations related to innovation incentives.</p> <p>Usually innovation reports are publicly available to facilitate knowledge transfer.</p>	<p>EMRA and BOTAS</p>





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## Recommendation VI

Recommendation		Explanation	Supportive Arguments	Key stakeholders involved
<p><b>Amendments to Secondary Legislation</b></p>	<p><i>In principle the proposed innovation incentive (via OPEX allowance) does not require specific modifications of the tariff regulations.</i></p> <p><i>Only Revenue Requirement Methodology must be modified</i></p>	<p>Revenue Requirement Methodology must be modified to increase R&amp;D expenditures in the allowed OPEX. It is recommendable to include also the following aspects:</p> <ul style="list-style-type: none"> <li>• Eligibility criteria for R&amp;D allowed expenditures.</li> <li>• Evaluation criteria.</li> <li>• Monitoring and reporting obligations of BOTAS.</li> </ul>	<p>In most of the countries analysed there is not specific legislation for the innovation incentive.</p> <p>Innovation incentive regulation is included in the overall Revenue Requirement Model regulation.</p>	<p>EMRA</p>





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## Recommendation VII

Recommendation	Explanation	Supportive Arguments	Key stakeholders involved
<p>BOTAS should develop an internal corporate policy to regulate and support innovation activities within the company.</p>	<p>BOTAS internal innovation policy should cover, among other things:</p> <ul style="list-style-type: none"> <li>- Priority innovation areas for the company.</li> <li>- Procurement policy and rules. Call for proposals' rules.</li> <li>- Internal audit. To comply regulated reporting obligations of EMRA, BOTAS should developed internal monitoring procedures.</li> </ul>	<p>Most advanced European TSOs in terms of innovations tends to go beyond the regulated innovation obligations.</p> <p>TSOs tend to develop internal innovation strategies that work as a whole. <b>Overall strategy of the company is not limited to the scope of regulated incentives.</b></p> <p>For example, French TSO (GRTgaz) launched the Research and Innovation Centre for Energy (RICE) to concentrate all R&amp;D activities of the company.</p> <p>National Grid (UK) has developed an internal procedure governing the call for proposals to develop substantial innovations.</p>	<p>BOTAS</p>





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# National Innovation Masterplan



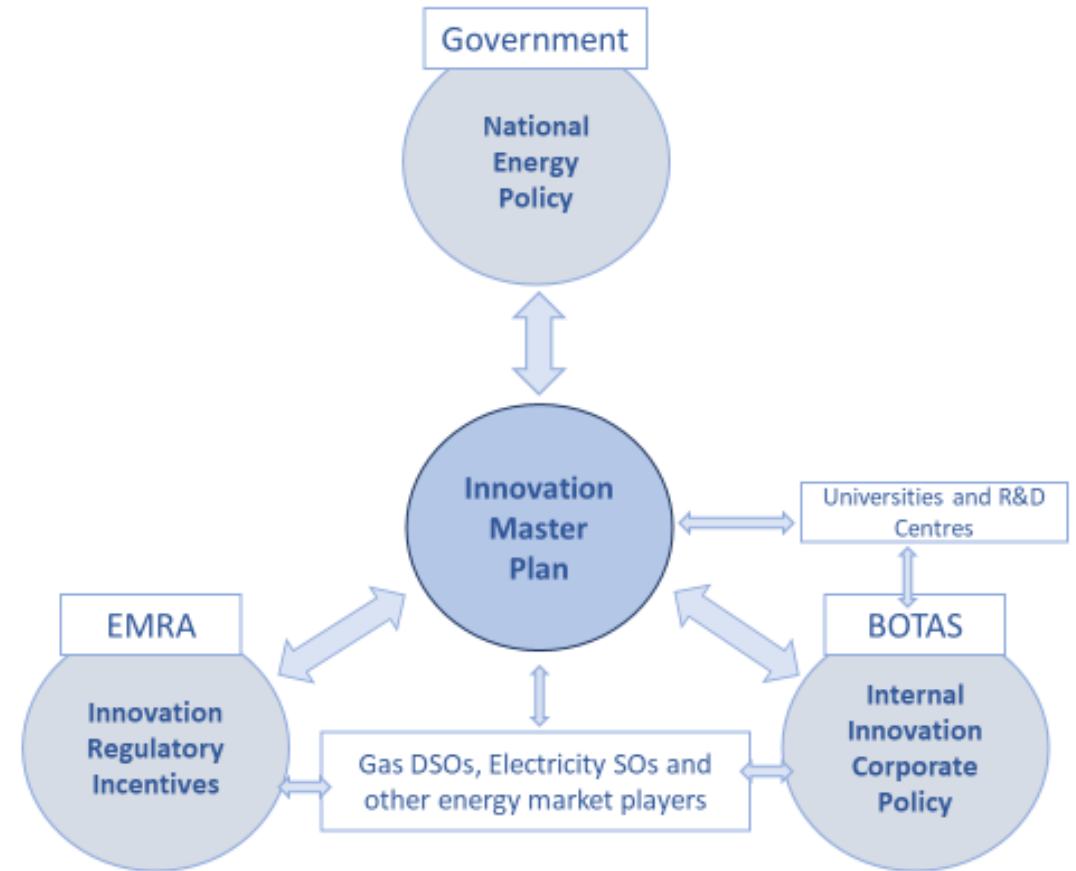


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# National Innovation Master Plan

- The Innovation Master Plan for the Transmission sector shall establish and develop the national priorities and strategy related to innovative technologies application.
- The Master Plan shall be the framework document driving innovation activities of BOTAS together with the regulatory incentives developed by EMRA.
- We think BOTAS should be the primary responsible of the preparation of the innovation master plan. BOTAS has first-hand knowledge of the needs of the gas transmission network and the state-of-the-art technology



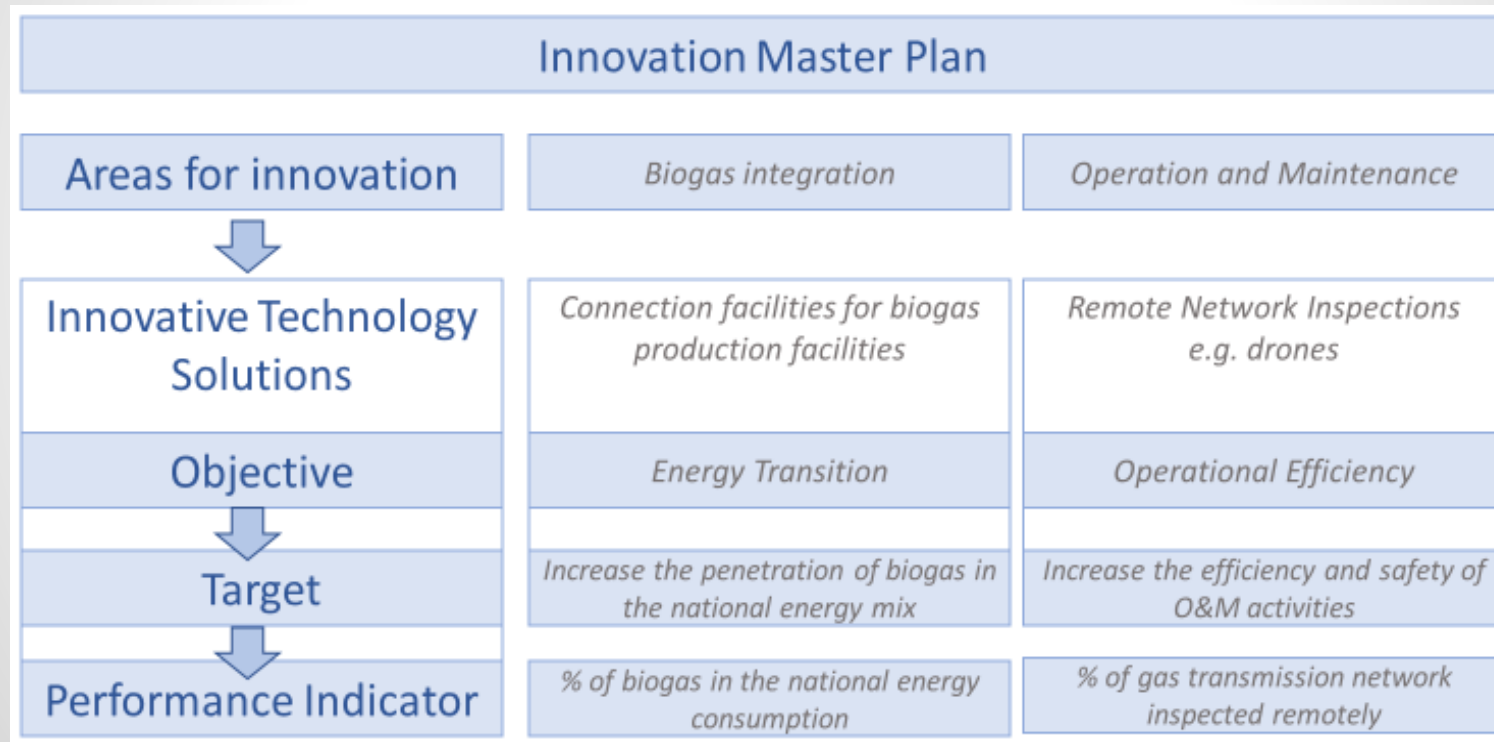


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# National Innovation Master Plan

- The Innovation Master Plan for Gas Transmission could follow a **top-down approach** like the one in use by the **National Energy Strategy (2019-2023)**. The top-down approach is based on an objective-target-performance indicators sequence.





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## Thank You / Teşekkürler

26<sup>th</sup> August 2020, EMRA, Ankara

