Action plan – LITHUANIA

Introduction

Regional policy context: "Baseline" situation

Lithuania as a region was included into the SET-UP project granted by the Interreg Europe program basing on the situation in energy transition progress and , precisely, in smart grid area. The situation of 2014 was taken as a "baseline" which was described in the national Operational Programme for the European Union funds' investments in 2014-2020. This policy instrument stated that:

- In the 2014-2020 programming period, Lithuania will seek to invest in smart electricity distribution network management technologies that offer new services to consumers, facilitate their active participation in the electricity market and enable a more efficient and smooth grid management.
- Lithuania finds itself at the start of discussion on implementation of smart grids. There is a general lack of knowledge and understanding of the theme among the main actors who should participate in the process in order to make efficient the policy instrument.
- Therefore, a lot of work is still needed in terms of local actors involvement and cooperation enhancement among them, thus allowing for a better and deeper understanding of policies objectives and empowering them to take an active role in the process of smarting of the system.

Respectively, the Operational Programme sets the INVESTMENT PRIORITY 4.1 which focuses on developing and implementing the smart distribution systems at low and medium voltage levels. Within this, specific objective 4.4.1 tests the prospects of introducing smart grid technologies. These could include active/integrated systems for monitoring equipment, technologies to support autonomous grid modes, diagnostic technology, fault detection devices and management technology for smart buildings.

The SET-UP cooperation was intended to influence this policy instrument by KREA through introduction of smart grid technologies that will provide new opportunities to enhance energy efficiency, provide more information to consumers about electricity prices and offer them pricing better adapted to their needs, and facilitate the provision of new services. It should support the deployment of distributed power generation, particularly the large quantities of renewables into distribution networks at low and medium voltage levels.

Within the SET-UP, various activities for interregional exchange, communication and stakeholder engagement (including business sector) have been foreseen to help partners to develop regional Action Plans. These plans will result in improved policy instruments supporting regions in their attempt to design, implement and direct more and better funding towards integrated smart grid strategies.

Situation in 2016: still limited progress in demand response and consumer empowerment

Awareness of demand response. Lithuania's level reached in promotion of demand-side participation in power system balancing, electricity markets and energy efficiency was rather low. Specifically, it cannot be illustrated by good/best practice examples. The major reasons can be identified as follows:

- ✓ low awareness of end-users about the consumer empowerment trends in Europe and USA;
- ✓ underloaded distribution grids in majority of Lithuanian towns and localities. Accordingly, the need for extension of distribution capacities is weak;
- ✓ relatively low energy prices and shallow peaks in electricity consumption limit potential benefits. None of these factors supports investments to smart metering per metering point (which mostly corresponds to a customer's connection-to-grid point);
- ✓ slow transposition of Energy Efficiency Directive 2012/25/EU and rather slack uptake of energy efficiency measures implementing the Directive in practice.

Legal status of demand response providers and aggregation service. Lithuanian legislation still does not know the categories like "Aggregator", "Intermediary" (for load pooling), "Demand-Side Management", "Demand Response", "Virtual power plant" or "Microgrid". In essence, there is only one legal provision which can be attributed to something approached to the demand response. Nevertheless, it has not worked and remained purely declarative. This provision stipulates that suppliers are eligible to offer the balancing services via regulating power option.

Smart-metering CBA study. As all other Member States, Lithuania has conducted the study "Cost-benefit analysis of the roll-out of smart electricity metering grid in Lithuania: Cost-benefit analysis of the smart metering roll-out Scenarios" (Ernst & Young, September 2012). The study revealed highly negative result: the net benefit in 15-year period was calculated to be -81 EUR/(metering point) as a difference of benefits 82 EUR and cost 163 EUR. As a consequence, Lithuania was forced to suspend the roll-out of smart metering in a total of 1.411 million electricity smart meters.

Policy to promote smart metering. To escape from the historical consequences of negative result of CBA on smart metering roll-out, Lithuanian Government has recently launched a pilot smart metering project targeting to measure the metering performance results. On 1 July 2016, the application of special tariff plan "Smart" with four time zone tariffs was allowed for project participants provided with smart meters (the total number of meters being 3000). The tariff plan "Smart" was introduced specifically for the project participants and could not be applied to customers beyond the project. It encouraged the participants to monitor their electricity consumption and use less electricity during peak hours, thus ensuring more uniform electricity consumption during the day and reducing the costs of the electricity system balancing. The said pilot project was a step towards the roll-out of smart metering.

Plans for regional demand response market. Baltic TSOs – Estonian, Latvian and Lithuanian transmission system operators Elering, Augstsprieguma tīkls and Litgrid () – intended to start the common research project "Development of flexibility services for energy market", which was intended to identify potential of flexibility services including demand response and to determine appropriate market design for such services on a pan- Baltic level and in the future on Nord Pool Spot level. Therefore, Latvian and Lithuanian TSOs in 2016 started the research to identify their national technical potentials of demand response resources as well as corresponding technical requirements for the provision of demand response services. Nevertheless, the study was not successfully ended.

Situation in 2019: significant progress on a path to smart grids

The situation in Lithuania changed significantly in the 2017-2019 in favor of smart energy, smart grids and consumer empowerment. It can be defined by the following milestones:

1. Law on Energy Efficiency adopted which introduced new definitions/concepts of aggregator, demand response, ESCOs which support the consumer empowerment
2. National Energy Independence Strategy adopted, with policy targets for prosumers, consumer empowerment and smart grids (June, 2018)
3. ENTSO-E Network Codes adopted by European Commission through the Regulations (EC). They became obligatory for Lithuania as a Member State. The Codes "push" the demand response and consumer empowerment which will be given the same level playing field in balancing and wholesale electricity markets as conventional energy producers and energy reserve providers
4. The Action Plan for National Energy Independence Strategy adopted (December, 2018)
5. National Regulating Authority approved payment rates for prosumers (up to 10 kW for residents) for the use of distribution grids to store an excess energy produced by their RES-based generators
6. Joint Baltic Balancing Market (Lithuania, Latvia, and Estonia) launched on 1 Jan 2018
7. Public institution Lithuanian Energy Agency established in the end of 2018, with institutionally assigned responsibility for monitoring the implementation of National Energy Independence Strategy.

Approach of Kaunas Regional Energy Agency (KREA) to Lithuanian realities

KREA used the interregional exchange experience obtained in the framework of SET-UP project in order to find out the possible actions for Lithuanian region, to disseminate the smart grid innovations on regional scale (TV interview, POWER4ALL national conference, participation in 4 public consultations) and to lobby the national stakeholders in favor of transition to smart distribution grids.

We could outline two specific features of Lithuanian situation relevant for SET-UP project implementation:

1. Awareness of stakeholders, and, on broader scale, the public awareness of smart grid prospects has risen significantly since the start of the project in 2016. Here the Lithuanian Ministry of Energy, national distribution network operator and in particular *Lietuvos Energija Group* were those that gave strong momentum to this rising.

   This implies that the actions for SET-UP Action Plan must be more innovative, more advanced than they looked earlier, i.e. in the SET-UP proposal preparation phase. The actions should reflect the recent views on, and developments in smart grids. For instance, our stakeholders asked for information about current trends in data exchange platforms / data hubs for the purposes of smart grids.

   2. Lithuanian Operational Programme 2014-2020 as a funding instrument has been largely exhausted (already in 2018) for the purposes of political instrument *Test the prospects of introducing smart grid technologies*.

   This meant that, at the best, that Operational Program can deliver funding only on limited scale. Respectively, we had to suggest actions with principal funding from other sources.

Lithuanian Action Plan's content in brief

KREA has identified 2 actions for the support of original policy instrument Operational Programme 2014-2020 in the specific area "Developing and implementing smart distribution systems at low and medium voltage levels. Testing the prospects of introducing smart grid technologies".

First action will be implemented by National Regulating Authority, the second – by Lithuanian distribution system operator. KREA will monitor the implementation of the Actions.

> Action 1 – Establishment of Regulatory Provisions on Integration of Virtual Power Plants, Demand Response and Other Flexibility Services
>
> Action 2 - Pilot project of voltage and reactive power control in distribution network using connected generation units.

In addition, KREA has performed one more action which supported and influenced another long-term policy instrument – National Energy Independence Strategy. This action originated from the enhanced views and experiences of KREA staff coming from the SET-UP implementation process.

Action 3 – Amendments, additions and suggestions to the National Energy Independence Strategy.

This action increases the coherence of energy policy in Lithuania as it couples the Operational Programme 2014-2020 and the Strategy. On the grounds of results achieved, the Action might be considered as already performed, with the end of the planning/ development phase of the Strategy (in 2018). Nevertheless, we suppose that Action could be proceeded with the next stage as the monitoring and implementation of the Strategy.

Action Plan

Part I – General information

Project: **SET-UP**
Partner organisation: Kaunas Regional Energy Agency
Other partner organisations involved: No other partner organisation in Lithuania
Country: Lithuania
NUTS2 region: not applicable
Contact person: Feliksas Zinevičius

- email address: krea@techpark.lt
- phone number: +370 37 491 036 ; +370 687 30 493

Part II – Policy context

The Action Plan aims to impact:

- Investment for Growth and Jobs programme
- European Territorial Cooperation programme
- Other regional development policy instrument

Names of the policy instrument addressed:
1. **Original instrument:** Lithuanian Operational Programme for the European Union funds' investments in 2014-2020 INVESTMENT PRIORITY 4.1 Developing and implementing smart distribution systems at low and medium voltage levels SPECIFIC OBJECTIVE 4.4.1 Test the prospects of introducing smart grid technologies
2. **New instrument (1)**: National Energy Independence Strategy (approved 2018-06-21)
3. **New instrument (2)**: Implementation Plan of National Energy Independence Strategy 2018-2022 (approved 2018-12-05)

Part III – Details of the actions envisaged

ACTION 1 – Establishment of Regulatory Provisions on Integration of Virtual Power Plants, Demand Response and Other Flexibility Services

1. The background (please describe the lessons learnt from the project that constitute the basis for the development of the present Action Plan)

Working on the Project, we have seen how the transition from conventional to smart grids contributes to the energy transition in the direction to the low-carbon economy. In this process, smart grids are largely empowered by the integration of flexibility services for grid operators through consumer engagement, demand response, energy storage, virtual power plants, smart metering and other drivers. Such integration is very promising for extension of electricity market, ancillary services market and new businesses for flexibility providers (communities, small consumers, small producers, prosumers, energy service companies). Nevertheless, this integration is challenging for a number of reasons and highly needs encouraging momentum from the regulatory basis. There are several countries which made certain progress in development of regulatory basis, particularly

for the larger providers of demand response. As for smaller ones, the progress is definitely lower. In general, the regulation of smaller flexibility providers and virtual power plants (VPPs) is still in early development state. Specifically, flexibility services companies note that they practically encounter the lack of clear and incentivising legal rules relating flexibility when establishing and launching the data exchange platforms for flexibility purposes. Our choice of this Action was determined by the interregional learning and experience exchange during the Project implementation time. In particular, the following should be noted:

1. Workhop presentations by energy sector stakeholders at partner meetings in Leicester, Seville and London outlined the importance of clear rules for consumer empowerment and deployment of smart grids
2. Draft Action of partner Algarve Agency (PT) for Algarve regional SET-UP Action Plan: to prepare technical guidebook for implementation of smart grids
3. Lessons learnt in France from pilot projects of demand response without sufficient legislative basis, presented by Maximilien Le Menn (Regional Council of Brittany)
4. Study visit to Octopus Energy Ltd during SET-UP meeting in London where the success of dynamic tariff programmes of the company was largely enabled by adequate rules of play
5. Skype lesson for Lithuanian partners and stakeholders on data hubs („PRIDE: your regional data hub") for Lithuanian Managing Authority presented by BDI partner Bertrand Yeurch (25 May, 2018). PRIDE's success rests upon sound rules for data exchange and services platform
6. Information from SET-UP advising partner Regen SW on the relevant views of, and adopted legislative acts by, Department for Business, Energy and Industrial Strategy (United Kingdom)
7. Information on state-of-the-art of national demand response markets in Europe as presented in publications of former SEDC – Smart Energy Demand Coalition, currently renamed SmartEN – Smart Energy Europe (information presented at project meeting in Kaunas by Alicia Carrasco (SET-UP Spanish stakeholder olivoEnergy)

As mentioned above, the specific objective 4.4.1 of original policy instrument deals with the prospects of introducing smart grid technologies. Inherently the concept "prospects" refers to "massive deployment", while the latter may be enabled by appropriate legal conditions. In light of this viewpoint, the establishment of regulatory provisions on integration of VPPs, demand response and flexibility services seems to be fairly linked to original policy instrument.

The Managing Authority, i.e. Ministry of Energy of Republic of Lithuania, expressed its clear support to the Action, both in respect of subject matter and content, and of benign financing conditions (See Section 6).

2. Action (please list and describe the activities to be implemented)

The Action is planned to establish the aforementioned Regulatory Provisions. Our consultancies with the stakeholder National Commission for Energy Control and Prices outlined that these provisions should rather be spread over several national legislative acts. It does not mean that the critical mass of future regulatory contents

on integration of VPPs, demand response and flexibility services is seen inadequate to form a separate / single legal document. The reason lies rather in the existing structure of legal basis of Lithuanian electricity sector.

In this respect, the Action will be included into the transposition process of new European legislation package on electricity market ("Clean Energy for All Europeans") to the national legislations. The Package is to be adopted by European Commission in summer 2019. The national acts to be amended or recasted, are Law on Electricity, Law on Energy Efficiency, Rules on the Use of Electricity Networks and others.

The aforementioned Regulatory Provisions will be established by National Control Commission and, if any, other eligible entities.

The Actions will contain the following activities:

1. Analysis of European good practices in regulatory basis for integration of VPPs, Demand Response and Flexibility Services
2. Analysis of regulatory requirements and recommendations set in the European Package "Clean Energy for All Europeans" regarding the integration in question (see Activity 1)
3. Determination of the scope of Regulatory Provisions on integration (see Activity 1) for Lithuanian situation.

The scope will include conditions and terms on flexibility, virtual power plants, demand response, energy storage, net smart metering and management of renewable power generators, marketing of ancillary services, business / economic models for aggregators, prosumers, consumers and other flexibility-related entities.

4. Development of Regulatory Provisions with their contents

5. Distribution of developed Provisions over the adopting national legal acts. The Provisions will be adapted according to their correspondence to the subject-matter of the acts

6. Stakeholder meetings to review the progress of Action implementation

7. "Fine-tuning" and final adjustment of Regulatory Provisions to the contents of adopting acts.

Currently NRA is adjusting the involvement of the Action into its Strategic Activities Plan for the next two years

3. Players involved (please indicate the organisations in the region who are involved in the development and implementation of the action and explain their role)

Major organisation is National Commission for Energy Control and Prices (*Valstybinė kainų ir energetikos kontrolės komisija*) acting in the role of NRA (National Regulating Authority). It will perform the elaboration of Regulatory Provisions on Integration of Virtual Power Plants, Demand Response and Other Flexibility Services.

Ministry of Energy of Republic of Lithuania acting in the role of Managing Authority will steer the implementation of the Action. It will organize the stakeholder meetings in order to discuss the progress, interim and final results of the process. Also it will conduct public consultation(s) on the prepared Regulatory Provisions. Lastly, it will approve the final version of these Provisions inside the adopting national legal acts.

The Working Group of Smart Grids and Smart Metering by the Ministry of Energy will be the major evaluator of Action's interim results and will provide the Action with comments and remarks. The Group will include the leading stakeholders as *Lietuvos Energija UAB,* parent company of *Lietuvos Energija Group;* Distribution and

Transmission Network Operators; Lithuanian Energy Institute; public energy supplier *Lietuvos energijos tiekimas UAB*; National Electricity Sector Association and, eventually, others.

In addition to the leading stakeholders, the external stakeholders are supposed to join the Action. They will be those beyond the above mentioned Working Group and acting, most likely, individually. They will provide feedback to the draft versions of the Regulatory Provisions and suggest their views and points in respect of the Regulatory Provisions. The independent suppliers and ESCOs are expected to be most active in this category of players.

KREA will monitor the Action implementation process providing the information support in terms of good European practices and innovative approaches, and measuring the progress in terms of key performance indicators (see Section 7). It will participate at the stakeholder meetings and most likely at meetings of the aforementioned Working Group.

4. Timeframe

Starting year is not clearly set, most likely in 2019. If action will be not ended in the SET-UP timeframe, KREA will prepare progress report at the begin of 2021.

5. Costs

No cost under the particular budget line.

6. Funding sources

The Action will be included into the "Strategic Activities Plan" assigned to National Commission for Energy Control and Prices. It is the holder of appropriations from the State Budget with registration code 90 900 1773 for implementation of activities included in the Plan.

7. Key performance indicators

The number of individual regulatory provisions on integration of virtual power plants, demand response and other flexibility services is seen as a major key performance indicator.

Here an individual regulatory provision is conceived as a separate statutory provision.

Within a legal act, such a provision is expressed as a structural unit of the document: section, article, clause, point or likewise.

The larger values of indicator point to the better performance of the Action.

KREA will count the numbers of individual regulatory provisions included into the adopting legal acts.

ACTION 2 – Pilot project of voltage and reactive power control in distribution network using connected generation units

1. The background (please describe the lessons learnt from the project that constitute the basis for the development of the present Action Plan)

As known, voltage and reactive power (V&Q) control is of crucial importance for any electrical network to be operated within the operational security limits. Managing the injection / absorption of reactive power to / from network allows for voltage regulation-up /regulation-down, respectively. V&Q control in conventional medium voltage distribution networks is provided mainly by on-line tap changers of primary transformers and reactive power compensating devices (capacitors, shunt reactors).

The transition to smart grids will bring to conventional distributed grid a lot of generation units, mostly driven by renewable energy sources (RES) as solar and wind. These units are connected to grid via DC/AC inverters – power electronic devices that convert the generated power from direct current (DC) to alternate current (AC). The inverter might be subjected to power factor control, i.e. changing the proportions between generation of reactive and active powers, including switching the reactive power compensation mode (injection to network, absorption from network).

The fresh impetus and significant momentum to create this Action was provided by project coordinators and partners and their stakeholder through trainings, discussions, study visits and documents (presentations, reports, articles) related to innovations in smart grid developments and integration of distributed generation units into control and improvement of smart grid operational conditions. This knowledge suggested to address the V&Q regulation in our region in the form of action for pilot project.

Among others, we distinguish the major information sources which provided the background for this Action:

- Study visit to Malaga Smart City Showroom (Spain, Malaga city) – lecture on demonstration project *SmartCity Malaga: a model of sustainable energy management for cities of the future.* The lecture was given by a speaker of ENDESA network operator company
- Tour visit to Malaga microgrid (Spain, Malaga city) – on-site visit to real microgrid in the district of Malaga city
- Visit of the Centre for the Evaluation and Monitoring of Energy in Andalusia (CESEA). This centre presented its good practice in both operation and development electrical grid in the region. It received data from ENDESA network operator and 70 small renewable power companies
- Lecture *Next Generation Networks: working with the grid* given by the representative of distribution network operator for the Midlands, South Wales and the South West (United Kingdom). The lecture addressed the new network control challenges and opportunities related to small scale generation units.
- Multiple references to website documents related to news on, and prospects of, smart control technologies for distribution grid – selected by SET-UP advising partner Regen SW. It is not-for-profit organisation which promotes renewable energy and energy efficiency in South West of England. In this

regard, we benefitted in particular from the Market Insight column on Regen website (news, reports, blog and other publications, 2012-2018)

- Field visit to the *Enercoutim Solar Demonstration* Platform (in Portugal) provided interesting insights on integration of renewable energy into distribution network, impact on network operational conditions and Internet of Things.
- Domestic energy storage – market growth - lecture on GridShare, Moixa's cloud-based software platform that connects storage devices to the grid to enable smart energy management. Lecture was given by managing director of Moixa, the UK's leading smart battery company.
- Presentations of *2nd Aggregation Flexibility Day*, hosted by Olivo Energy in Malaga (Spain), 24 Apr 2018. Upon the consent of the participating companies, the presentations have been shared with SET-UP partners. The presentations addressed cohesion of electricity market and smart network management.

2. Action (please list and describe the activities to be implemented)

1) Specify the scope, schedule, resources of the pilot project. Evaluate the budget. The project aim is to test the performance of V&Q control in the network using connected generation units

2) Select the segments of distribution network to play a role of testing ground for the project purposes. These segments will consist of distribution substation(s) and feeders with connected wind, solar and other (e.g. biomass) power plants sufficient to make considerable impact on voltages in the selected segments. The segments will be chosen by network owner, i.e. Lithuanian DSO

3) Conclude the agreements with power plant owners connected to the selected segments on participation in the project

4) Provide additional equipment and technical functionalities into the selected segments. It may refer to communication channels, local controllers, smart meters and other measuring equipment, etc)

5) Elaborate testing programs for V&Q control.

6) Conduct the field tests on selected segments to measure the effectiveness of V&Q control in accordance with the testing programs

7) Evaluate the data obtained from the testing, summarize the results and derive the lessons learnt.

Currently activities (1) and (2) are completed in app.70%. KREA has contributed to activity (1).

Activity (5) is in progress.

3. Players involved (please indicate the organisations in the region who are involved in the development and implementation of the action and explain their role)

1)The project's promoter, manager and developer is Lithuanian DSO *Energijos skirstymo operatorius AB*. It will perform project preparation, launching, conducting and closing activities.

2)Since the DSO belongs to the *Lietuvos Energija Group*, it is under the corporate governance of *Lietuvos Energija, UAB*, the parent company of *Group* which coordinates the activities of *Group*. Respectively, this parent company will support the Project's implementation and contribute to certain organizational arrangements.

3)Ministry of Energy of Republic of Lithuania will undertake the Project's steering role, including organisation of stakeholder meetings to discuss the implementation process, unforeseen difficulties and results.

4)Owners whose generating units participate in the testing activities will ensure operational readiness of their units in accordance of terms and conditions specified in the agreements with DSO.

5)KREA will observe the process, with consultancy support and quick response to Action implementation challenges if requested.

4. Timeframe

Three phases are planned according to project scope. Starting year is 2019 (project planning, public procurements). Technical mounting and field testing works – in 2020. KREA will aim at preparation of monitoring report for the period 2019-2020 at the begin of 2021.

DSO will complete the project in 2021 (detailed analysis of testing data and, elaboration of project results and conclusions).

5. Costs

Approximately, 300,000-400,000 Euros

6. Funding sources

1. Own funds of Lithuanian DSO *Energijos skirstymo operatorius AB*

2.Lithuanian Operational Programme for the European Union funds' investments in 2014-2020

7. Key performance indicators

The KREA's description of project progress in 2018-2020 in monitoring report (2021), with the use of indicators to be designed specific for this pilot project.

ACTION 3 – Amendments, additions and suggestions to the National Energy Independence Strategy

1. The background (please describe the lessons learnt from the project that constitute the basis for the development of the present Action Plan)

National Energy Strategy is a regularly updated policy instrument in the recent 25-year period in Lithuania. First strategy was adopted in 1994, with the updates followed in 1998, 2002, 2007 and 2012. The last update under the title *National Energy Independence Strategy* was approved by the Lithuanian Parliament *Seimas* on 21 June 2018.

The Strategy highlights that the objective of Lithuania's energy sector is to meet the needs of the state of Lithuania, its citizens, and businesses. It establishes the vision of Lithuanian energy sector, its implementation principles, strategic directions, objectives and tasks. The Strategy is implemented in the following four strategic directions:1)competitiveness; 2)reliability; 3)mitigation of environmental impact (energy savings and green

energy); 4)participation of the country's businesses in pursuance of energy progress (http://enmin.lrv.lt/uploads/enmin/documents/files/Nacionaline%20energetines%20nepriklausomybes%20strategija_2018_EN.pdf).

Strategy was finalized by the Ministry of Energy, the SET-UP Managing Authority. After the Ministry has launched the public consultation for the Draft Strategy in 2017, KREA used this opportunity to contribute with amendments and additions. There have been 2 consecutive phases of consultation, corresponding to Draft 1 (June, 2017) and Draft 2 (September, 2017), respectively. For both phases, KREA has suggested its contributions underlying the innovative views and outlooks based on the knowledge gained through the SET-UP learning events, partner experience exchanges and performance of project tasks ("home tasks").

Upon adoption of the Strategy by the Lithuanian Parliament (21 June, 2018), the Ministry of Energy announced the new public consultation for its draft document *Implementation Plan of National Energy Independence Strategy 2018-2022*. KREA suggested a number of measures for this draft Plan.

Our amendments, additions and suggestions related mostly to demand response, consumer empowerment, prosumers and innovative good practices. As sources of knowledge and ideas, we refer to the following ones as most influential:

- Thematic analysis of SET-UP partners country reports (FR, ES, UK, PT, HU) prepared within Energy Team 1 *Empowering consumers: strategies for consumer engagement and the provision of information tools, support services and opportunities* (team coordinator – South Transdanubian Regional Development Agency, Hungary)
- Thematic analysis of SET-UP partners country reports (FR, ES, PT, UK) prepared within Energy Team 2 *Economic Models: Analysis of the economic drivers for the delivery of SMART grids, including good practice and developing the case for action* (team coordinator – Leicester Energy Agency / Leicester City Council, United Kingdom)
- *Low Carbon Action Plan & ERDF* - Jonathon Little, Economic Strategy & Growth Officer of LLEP - Leicester & Leicestershire Enterprise Partnership (United Kingdom). Presentation on the stakeholder workshop in Leicester during the 2nd SET-UP partner meeting (03 Oct 2016)
- Information from Andalusian partners on FLEXICIENCY project with active participation of Spanish company ENDESA (network operator activities, retail trading). The FLEXICIENCY project aims to demonstrate that the deployment of novel services in the electricity retail markets such as advanced monitoring, local energy control and flexibility can be accelerated.
- Reports and other publications issued by SET-UP advising partner Regen SW (United Kingdom) published on the organisation's website in the column "Market insights", notably those related to future scenarios as (1) *Distributed generation, demand and storage study – South Wales 2016*; (2) *South West Renewable Energy Progress Report 2014*; (3) *WPD Storage Growth Scenarios & Operating Modes – Results Report,* 2017; (4) *Distributed generation, demand and storage study – East Midlands 2017;* (5) *Rough Guide to Engaging Communities in Energy Network Innovation, 2017*. Specifically, in

the latter report, Regen working with the Energy Networks Association has produced this guide addressed to communities and distribution network operators.

- Two presentations on the stakeholder workshop in Seville during the 3rd SET-UP partner meeting (15 Feb 2017):

- *Smart grids in the Energy Strategy for Andalusia 2020* - Julio Escudero Padilla, Andalusian Energy Agency
- *AndalucíaSmart 2020 (PAAS2020) Action Plan* - Antonio Cabello Bastida, Directorate-General for Telecommunications and the Information Society (DGTSI). http://bit.ly/AndaluciaSmart. Timeframe: 2016 - 2020.

  This Plan is based on strategic transformation of Andalusia into a Smart Region. It aims to contribute to the achievement of other technological objectives included in higher strategic frameworks: "Digital Agenda for Europe", "Digital Agenda for Spain" and "Research and Innovation Strategy for Smart Specialisation RIS3 - Andalusia"

2. Action (please list and describe the activities to be implemented)

The Actions encompasses 3 Activities. Activities 2.1 and 2.2 are already implemented, while the latter one is scheduled.

2.1 Activity. Amendments and additions to the Strategy (New policy instrument (1), see above "PART II – Policy context)

That being said, KREA suggested several amendments to the draft National Energy Independence Strategy. At least. seven of them, as given below have been taken to account by the host of the public consultation (Ministry of Energy) and included into the final version of the Strategy (approved on 21 June 2018):

1. It is insufficient to support the RES-based prosumers by only one means – to adopt the excess generated energy to the distribution grid. The prosumers should be given opportunity to sell the excess energy on the electricity markets.
2. "Consumer empowerment" was used in erroneous wording / meaning in Lithuanian provisions of the Strategy. We suggested a Lithuanian term reflecting the concept of empowerment we used in the SET-UP project (this concept was defined in the template for SET-UP partner country reports "Consumer empowerment" prepared by Hungarian partner).
3. For imperative provision "To undertake the roll-out of smart metering and smart grids and to install the data hubs" we added "basing on the innovative solutions of best European practices". Specifically, here we had in mind our experience from interregional information exchanges in SET-UP project as Andalusian Smart Energy and Smart grid Strategies and Good Practice of Brittany Regional Council.
4. For the provision "production of energy from renewable sources and its balancing in power system should be supported from public services obligation funds" we added "basing on the best European practices".

Specifically, here we had in mind our our experience from interregional information exchanges in SET-UP project as Moixa residential batteries to store self-produced electricity via GridShare platform and SET-UP partner reports on thematic analyses "Consumer empowerment" (Energy Team 1) and "Economic models" (Energy Team 2).

5. For the provision "Optimal electricity tariff policy should be designed" we added "basing on the best global practices".

6. The new player as "energy service provider" (for aggregation of small capacities of prosumers) was introduced into the provisions of Strategy.

7. Our explanation of term "consumer empowerment" as "consumer engagement into network management and markets" was included into several provisions.

In parallel to the public consultation, we could note that live sharing our SET-UP experience with Ministry of Energy and other stakeholders during meetings contributed to shaping of some provisions of the Strategy towards the favor of smart grids, demand response and interregional experience. We find our footprint in the following points of the final Strategy: 1.1.5; 1.3.3; 16; 23.3; 25.1.2; Fig. 8 ; 42.2.4; 42.3.3; 42.5 and 71.4 (http://enmin.lrv.lt/uploads/enmin/documents /files/Nacionaline%20energetines%20nepriklausomybes%20strategija_2018_EN.pdf).

2.2 Activity (completed). Suggested measures to the Strategy Implementation Plan (New policy instrument (2), see above "PART II – Policy context),

In September 2019, KREA submitted several measures for the *Strategy Implementation Plan* 2018-2022responding to the call for public consultation initiated by Ministry of Energy. These measures have been taken to account by the Ministry in finalizing this Plan which subsequently was approved in December 2018. Also the previous KREA's submissions in 2017 (for Strategy itself) and former presentations of SET-UP information to SET-UP Lithuanian stakeholders (2016-2018) left the footprint on the Plan as well. In particular, this footprint can be seen from the Plan's clauses 4.2.2, 4.2.2.2, 5.1.1.5, 8.1.4.2, 8.1.4.6, 9.1.2.1 and 9.1.2.2 covering the promotion of consumer empowerment and smart grids and application of innovative European practices.

2.3 Activity. Monitoring of implementation of National Energy Independence Strategy and its Implementation Plan (New policy instruments (1) and (2), see above "PART II – Policy context)

The further actions refer to implementation of the Strategy and its Implementation Plan for the period 2018-2022. The Plan was adopted on 5 Dec 2018. Since 1 Jan 2019, the newly established entity - public body *Lithuanian Energy Agency* (*Lietuvos energetikos agentūra*) was entitled to coordinate and monitor implementation of the Strategy / Strategy's Action Plan.

3. Players involved (please indicate the organisations in the region who are involved in the development and implementation of the action and explain their role)

1) Public body *Lithuanian Energy Agency* will monitor the implementation of Strategy's provisions improved and initiated by the KREA amendments and promotion activities.

2) Ministry of Energy will provide general control of Agency's activities.

3) KREA's will monitor what projects and measures are practically implemented in Lithuania corresponding to KREA's footprint in National Energy Strategy and its Implementation Plan. KREA is going to detect such projects and measures from own surveillance activities and through the contacts with *Lithuanian Energy Agency* and Ministry of Energy, our Managing Authority in SET-UP project.

4. Timeframe

2016-2017 - analysis of information from SET- UP exchanges,

2017 –suggestion of amendments and additions for the Strategy,

2018 – suggestion of implementing measures for the Strategy Implementation Plan,

2019- 2020 – monitoring of Strategy implementation

5. Costs

No specific data available.

6. Funding sources

State budget appropriations for Lithuanian Energy Agency.

7. Key performance indicators

The number of individual projects and measures practically carried out in Lithuania in line with the Strategy and its Implementation Plan 2018-2022.

Date:_____

Signature: _____Feliksas Zinevičius____

Stamp of the organisation (if available): _____

LIETUVOS RESPUBLIKOS ENERGETIKOS MINISTERIJA
MINISTRY OF ENERGY OF THE REPUBLIC OF LITHUANIA

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Kaunas Regional Energy Agency (KREA)
Breslaujos 3b, LT-44403 Kaunas, Lithuania

23-07-2019 No. (10.5-12)3-1060

SUBJECT: PROJECT "SMART ENERGY TRANSITION TO UPGRADE REGIONAL PERFORMANCE (SET-UP)"

Ministry of Energy of the Republic of Lithuania (the Ministry), as the Intermediate Body of the Lithuanian Operational Programme for the European Union Funds' Investments in energy field in 2014-2020, has provided from the outset full support to the Kaunas Regional Energy Agency (KREA) as the "Smart Energy Transition to Upgrade Regional Performance (SET-UP)" project partner in Lithuania. Furthermore, the Ministry has been a member of the Local Group of Stakeholders.

The Ministry hosted all seven meetings of the Local Group of Stakeholders and had the opportunity to participate in five SET-UP interregional learning events (Leicester (United Kingdom), Sevilla (Spain), Vilamoura (Portugal), Paks (Hungary) and Kaunas (Lithuania).

In these contexts, it was possible for the Ministry to follow and participate in the development of the SET-UP project and to be aware of the quality of the work developed. The recently finalized SET-UP Action Plan brings together the contributions of the stakeholders involved and constitutes a working tool for the implementation.

For these reasons the Ministry is able to endorse the Action Plan submitted by KREA in the context of the Interreg Europe project SET-UP.

Yours sincerely,

Egidijus Purlys
Vice-minister of Energy

TO BE SENT BY EMAIL ONLY