REKK REGIONAL CENTRE FOR ENERGY POLICY RESEARCH

RENEWABLE ENERGY AND ENERGY EFFICIENCY QUARTERLY

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FOCUS

MORE EFFORT NEEDED TO REACH EU ENERGY EFFICIENCY TARGETS

The 2020 energy efficiency target is likely to be missed by 2-3% but this gap can be bridged with the better implementation of existing policies.

The European Union is likely to miss its final energy savings target for 2020 by 2-3%, estimates a joint study by PwC, Fraunhofer ISI and TU Wien.[1] The EED adopted in 2012 sets 1078 Mtoe as the final energy consumption target for EU27 in 2020. This means a reduction of final energy consumption by 18.5 Mtoe (which is 25% higher than Hungary's annual final energy consumption) between 2012 and 2020.

The estimated gap only accounts for policies put in place up to 2013; the study says that an extension of present measures and the application of some successful measures from the national level would be enough to reach the target. What is more, by 2020 it is even possible to reduce consumption to 4.9% above the target, namely to 1011 Mtoe in a High Policy Intensity (HPI) Scenario. This scenario would result in 876 Mtoe consumption by 2030 and bring an economic benefit of 22-27 billion Euros annually up to 2030. If only the measures initiated up to 2013 are accounted for, final energy consumption is likely to drop to 1070 Mtoe by 2030.

The study identifies several areas that can potentially contribute to closing the gap (30 Mtoe) by 2020, even without the introduction of brand new policies. The Energy Performance of Buildings Directive (EPBD), for example, is not yet fully implemented in the Member States. Moreover, the EPBD still allows for some range of interpretation, e.g. regarding the definition of nearly zero-energy buildings. The study assumes that Member States will implement the directive in an ambitious way and hence contribute an additional 14.5 Mtoe to the required savings (of which two thirds may occur in the residential sector).

The revisions of implementing directives of the Eco-design Directive (due in 2015), the recast of the labelling scheme, and a moderate adoption of new implementing measures may contribute another 1.4 Mtoe of savings from the final consumption of residential and 4.7 Mtoe of tertiary sector appliances. In the transport sector, the study envisages an EU-wide road charge per vehicle-km driven on motorways for passenger cars; the promotion of energy efficient public commercial vehicles; and a stimulus program granting 2000 EUR for owners of cars older than 10 years to buy more efficient vehicles. Similar measures are already in place in a number of Member States, and their "generalization" could bring about 11.3 Mtoe of savings by 2020.

As far as the industrial sector is concerned, it is again the revision and ambitious implementation of the Eco-design Directive and EPBD that might contribute to closing the savings gap. The study also recommends the wider use of the so called Learning Networks for Energy Efficiency (LEEN). In Germany, there are already 50 networks that group around 700 companies, and LEENs have proved to be highly effective in promoting energy efficiency through, for example, voluntary agreements. These measures, supplemented with the structural reform proposed by the Commission to repair the Emissions Trading Scheme and achieve a carbon price of about 35 euros in 2030, might save another 5 Mtoe by 2020.

DEVELOPMENT OF TECHNOLOGY PRICES

HEAVY ENOUGH? EXTRA COSTS IMPOSED ON PV INSTALLATIONS

Costs of PV installation rise on average by 115 000 to 175 000 HUF + VAT for a 3.5 kWp system

The Hungarian government imposed an environmental product charge on photovoltaic panels as of January 1, 2015 by amending Law No. LXXXV of 2011. The value of the charge is 114 HUF/kg resulting in an average price increase of 40 000 HUF in case of a typical family house PV system (3.5 kWp) according to MANAP, the Association for Photovoltaic Industry in Hungary. Another cost to be borne by PV investors from June 2015 arise from the obligation to install a security remote control and manual switch next to the modules to save firemen from electric shocks in case of a fire. The obligation is stipulated in the National Fire Safety Code (Order of the Minister of Interior No. 54/2014), and raises costs of installation on average by 75000 to 135000 HUF + VAT for a 3.5 kWp system. Both provisions drew criticism amongst promoters of renewable energy, who claimed that the measures are unprecedented in other countries.

REKK OPINION

Levying the environmental tax on PV panels that help avoid externalities caused by fossil fuel-based energy production might be problematic from several viewpoints. First, environmental economic theory suggests that imposing tax on products instead imposing tax on harmful materials used for their production leads to inadequate incentives. PV modules supplied by different manufacturers might contain different amounts of toxic inputs, and being subject to the same level of charge leaves no incentive to decrease the amount of harmful contents that are used. Secondly, installers should be compensated for the extra costs incurred by the new regulation in order to sustain their interest in building new capacities. In case of a feed-in tariff or feed-in premium system this can be easily done by raising the level of support. However, household-sized units up to the maximum capacity of 50 kVA are subsidized in Hungary in the form of „net metering", in which case the level of „support" basically depends on the price of electricity received from the grid, the sales price obtainable, and PV investment costs - therefore there is no opportunity to provide compensation.

HUNGARIAN RES-E REGULATORY AND MARKET PANORAMA

MONTHLY DEVELOPMENT OF RES-E GENERATION IN HUNGARY

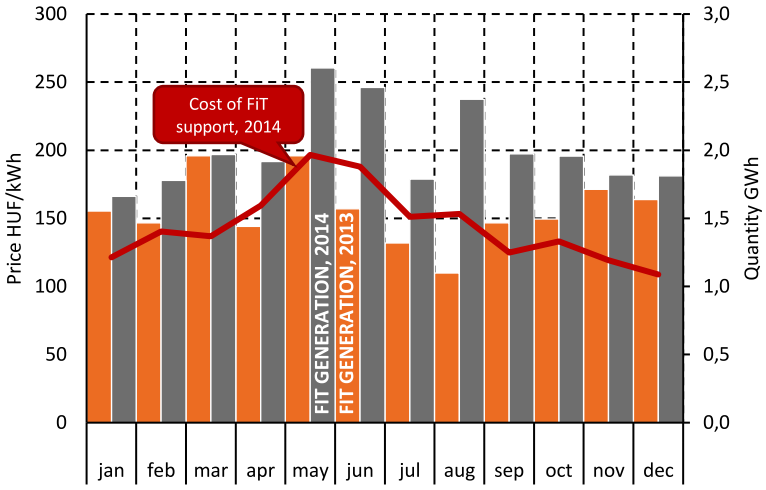
29% increase (~550 GWh) in RES-E generation in 2014 compared 2013.

In 2014, total yearly FIT generation increased by a considerable 29% compared to 2013, from 1868 GWh to 2411 GWh. While FIT generation in 2013 amounted to 4.8% of gross inland electricity consumption, this proportion grew to 6.1% in 2014. Data on total RES-E generation (which includes non-FIT generation as well) in 2014 is not yet available.

The distribution of generation is quite uneven in these two years, as in 2013 summer production was the lowest while in 2014 the highest. The variation in the level of production is due to the changes in biomass-based generation. Thus this different distribution could be the consequence of the timing of the re-allocation of expired biomass quotas: as in the case of sufficient quotas, producers with non-intermittent capacities usually prefer to concentrate their generation to periods with higher prices, and in 2014 the mean hourly base-load HUPX price was lower in summer (38.34 EUR/MWh) than in other periods of the year (41.23 EUR/MWh).

Average cost of FIT support was 1.44 HUF/kWh in 2014, or 11.5% of the mean hourly base-load HUPX price (12.50 HUF/kWh). The values were calculated from the total cost of FIT (including the exact FIT support received by producers excluding the value of electricity, the cost of balancing energy and the operation expenses of the FIT

Figure 1: Monthly generation receiving FIT support (2013-2014) and cost of FIT support (2014)



Source: MAVIR

balancing group), divided by the total consumption for every month. As we mentioned in our previous report this cost is not the contribution every end user needs to pay, as from 2014 household customers are exempted from the payment of this element of the electricity price, thus a higher fee is paid by non-household users.

CHANGES IN RES LEGISLATION

Changes in RES legislation referred to the PV panels. In the past quarter, an additional surcharge on solar panels was introduced. The modification of Law No. LXXXVI of 2011 on environmental protection surcharge introduced an additional tax on the sale of PV panels. Furthermore, a new regulation of the Ministry of Internal Affairs issued the National Fire Protection Ruling, which requires the installation of an additional remote controlled and manual switch of the PV panel.

In its 1794/2014 Decree of the Hungarian Government, a new association with a capital of 3 Bn HUF was founded: First Hungarian Environmental Friendly National Social Association (ESZOSZ, Első Magyar Környezettudatos Szociális Országos Szövetkezet). Funding is ensured by the TÁMOP, ie. EU sources. The Association has started offering forestry jobs for unqualified workforce in the Northern Alföld Region of the country, at wages of 100-160 000 HUF per month. The appearance of a new forestry biomass player at the market may put pressure on biomass prices in the medium term. However, the aim of the Association is social and employment policy related rather than energy sector related issue.

GOVERNMENT SUPPORT FOR MUNICIPALITIES

The city of Tatabánya was granted a loan guarantee of 6.2 Bn HUF, which covers the costs of fuel switching the local heating plant from gas to wood chip firing.

CHANGES IN RENEWABLE CAPACITIES BASED ON HEPURA RESOLUTIONS

2.4 MWe capacity were issued generation license. In the first quarter of 2015 and the last month of 2014, the HEPURA issued 3 licenses (as of 01.04.2015. HEPURA website status). Altogether 2.4 MWe capacity were granted generation license.

Installation work at the 15 MWe solar power plant at Mátra has commenced in spring 2015, the plant is expected to connect to the grid in October 2015. Licensing of the new solar capacity was quite unique: since Mátra already had a production license for its 950 MWe fossil plant, the installation of 15 MWe additional capacity was regarded as an extension of capacities not as new generation license.

Table 1 Summary of HEPURA resolutions

Power plant	Resolution	Resolution type	Fuel	Capacity (MW_e)	Commercial operation / expected commercial operation*	Annual quota (MWh)	Period	Total quota (MWh)
Balassagyarmati biogáz kiserőmű	2718/2014	new license	biogas	1.054	2015.06.01.*	7700	7 years 5 months	57 750
Nagytarcsa Naperőmű	2727/2014	modification	solar	0.11	?	124	12 years 6 months	1554
Szegedi Landfill kiserőmű	2852/2014	new license	biogas	1.195	2014.11.01.	8963	5 years	44 813

EU REGULATION

HUNGARY IS LIKELY TO AVOID THE PENALTY FOR FAILING TO TRANSPOSE THE ENERGY EFFICIENCY DIRECTIVE

The European Commission referred Hungary to the Court of Justice for failing to transpose the Energy Efficiency Directive on 26th March 2015. Member States had to implement the Directive by 5th June 2014. As Hungary failed to do so, in November 2014 the Commission sent a reasoned opinion asking for the notification of all the transposition measures. As until then no such national legislation has been notified to the Commission, a daily penalty of 15,444 € was proposed. The penalty level was set taking into account the duration and the seriousness of the infringement. The final amount of the daily penalty is always decided by the Court of Justice. Even though Hungary performs exceptionally poor in compliance with EED related notifications, infringement procedures have been initiated for all other Member States (except Malta) as well.

As the Ministry of National Development submitted the draft Energy Efficiency Law of Hungary[2] in April, the government started negotiations on the penalty proposed by the Commission and it is very likely that it will achieve a withdrawal of the Commission's request to the Court of Justice. The draft law provides the framework for the transposition of the various provisions of the EED. It reiterates the definitions and requirements of the EED (including the reporting tasks towards the European Commission), nominates the public bodies responsible for implementation and defines the adjacent legislation (governmental orders and orders of the Ministry of National Development and the Hungarian Energy and Public Utility Regulatory Authority - HEPURA) that is to be developed by mid-2015. Even though the draft law only provides a framework for the implementation it already reflects some important decisions of the government:

- Hungary decided to achieve the final energy savings target of Art 7 (EED) by alternative measures only and does not plan to introduce an energy efficiency obligation scheme that would require energy suppliers/distributors to achieve a pre-defined savings with the end-consumers,
- the CBA methodology related to the development of new thermal electricity generation installation with a total thermal input exceeding 20 MW (Art 14) in order to assess the economic viability of cogeneration is to be developed by the HEPURA (it is already under development),
- HEPURA can grant exemption from the completion of the CBA and also from the requirement of Art 14 if it is judged to be justifiable on special legal, financial and ownership grounds (notification of the government and the European Commission is required in these instances),
- HEPURA is responsible for the monitoring of achieved energy savings on the basis of the data provided by implementing agencies nominated by the government for each policy measure, and
- Companies with EN ISO 50001 are exempted from the compulsory energy audits of (required every four years).

THE ENERGY UNION: UNITY IS STRENGTH

The communication on the Energy Union package,[3] released on February 25, 2015 envisages an EU-wide integrated energy system based on a properly functioning internal market and strengthened solidarity among Member States in times of supply shocks. The „union" refers not only to an integrated market to be ensured by delivering the major infrastructure projects linking national energy systems (mentioned as the „hardware" in

REKK OPINION

Several measures proposed in the communication might contradict the present energy policy goals of the Hungarian government. The desire to coordinate energy regulatory frameworks of Member States would entail less sovereignty in forming national policies, while Member States would have to meet transparency requirements related to both gas supply contracts and nuclear installation projects. The Commission would also demand regular and detailed monitoring and reporting on the composition of energy costs and prices so that they convey proper information on energy market conditions, and call for the phasing-out of public interventions that distort market-based prices.

the text) and by enforcing the completion of legislation related to the creation of the internal market („the software"), but also to unifying the bargaining power of Member States and coordinating national policies in order to increase supply security and reduce dependency on dominant fuel suppliers. Reaching the 2030 climate, renewable and energy efficiency targets is closely integrated to the vision of the Energy Union, as renewable energy deployment and lower energy consumption due to energy efficiency measures can largely contribute to the mitigation of reliance on imports from outside of the EU. The transformation of the EU energy system is supposed to take place over the next five years , by giving more power to the ACER (Agency for the Cooperation of Energy Regulators) and the alliances of electricity and gas TSO's: the ENTSO-E and ENTSO-G.

MONITORING OF INVESTMENT SUPPORT OPTIONS

EU SUPPORT FOR ENERGY EFFICIENCY INVESTMENTS

Horizon 2020 - 80 billion Euros for the period 2014-20 in more than 20 research areas from agriculture to health and transport, including energy.

According to European Commission estimates, investments in the order of 100 billion Euros per year are necessary to meet the EU's 2020 energy efficiency target. The EU has therefore put in place a range of financing schemes that – with the help of public funds – try to also mobilize private capital in this field. An overview of these schemes is available on the Commission's homepage; we will now offer some details of the biggest EU Research and Innovation program ever, Horizon 2020.

Horizon 2020 has a budget of 80 billion Euros for the period 2014-20, which is set to be multiplied by the private investment it attracts. Funds are available in more than 20 research areas from agriculture to health and transport, including energy. A budget of 5 931 million Euros has been allocated to non-nuclear energy research for the 7-year period. The first (biannual) work program of this field is titled "Secure, Clean and Efficient Energy", and is split into three focus areas: Energy Efficiency, Low Carbon Technologies, and Smart Cities & Communities.

As far as energy efficiency is concerned, the current work program covers buildings and consumers; heating and cooling; industry and products; and finance for sustainable energy (Horizon 2020 Work Programme 2014-2015).[4] The overall indicative budget for energy efficiency is 97.5 million euros for 2014 and 100.71 million euros for 2015. Those interested in funding opportunities should consult the Commission's Participant Portal, where a comprehensive "H2020 Online Manual" helps to find calls and partners, and guides through the steps of submitting a proposal.

In our next issue we will take a closer look at the Commission's Project Development Assistance facilities, which aim to support the development and launch of "ambitious and replicable" energy efficiency projects.

ENERGY EFFICIENCY SUPPORT IN HUNGARY

Further 10 bn HUF support for the residential sector

As the fourth part of the „Warmth of Home Program", Condominium Renovation Subprogram ("Otthon Melege Program" and „Társasházak energia-megtakarítást eredményező korszerűsítésének, felújításának támogatása alprogram") was announced by the Ministry of National Development with a total funding of 10 bn HUF. The subprogram will be launched at the end of April this year. Buildings with 5-60 apartments, built after 1946, but have been issued building permits not later than 31st December 2006 can

Table 2: Condominium Renovation Subprogram for residential energy efficiency support

	Total support (million HUF)	Type of support	Max. support level	Availability
Condominium renovation	10 000	pre-financing required from applicant	750-950 HUF/avoided CO2 unit, but max. 50% of total costs	from 30.04.2015 until the funds are exhausted

apply. Also heat measurement and control should be functioning in the supported buildings, latest by the end of the funded renovation.

Measures eligible for support are different types of complex modernization: replacement of doors and windows in the apartments and in common areas, thermal insulation of all facades, installation of renewable energy generating units, etc. The refurbishment of approximately 20 000 apartments and around 350-650 thousand HUF/apartment support is expected.

Three other subprograms have already been launched last year, as we have presented in 2014/4 Quarterly. The fund for the "new house hold appliances" subprogram was raised twice: first with 60 million, then with another 107 million HUF by the end of 2014. Table 3 summarizes the results until the end of March 2015.

Notes

1 Study evaluating the current energy efficiency policy framework in the EU and providing orientation on policy options for realising the cost-effective energy-efficiency/saving potential until 2020 and beyond.

2 T/4285. számú törvényjavaslat az energiahatékonyságról

3 COM(2015) 80 final A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy

4 HORIZON 2020 WORK PROGRAMME 2014–2015

5 PÁLYÁZATI FELTÉTELRENDSZER „Otthon Melege Program", „Társasházak energiamegtakarítást eredményező korszerűsítésének, felújításának támogatása" alprogram

Table 3: Results of residential energy efficiency support schemes (as of March 2015)

	Number of applications	Number of supported applications	Total budget (million HUF)	Total funds appropriated (million HUF)	Starting date	Availability
Replacement of doors and windows, shading	3 000	decision still in progress	1 100	n.a.	26.11.2014	end of application period 05.01.2015
New household appliances (fridge, freezer)	26 000	15 812	628+60+107	795	14.11.2014	fund exhausted 02.02.2015
Boiler replacement	2 800	decision still in progress	1 000	1 000	14.11.2014	fund exhausted 06.12.2014