



**EXPERT EVALUATION NETWORK  
DELIVERING POLICY ANALYSIS ON THE  
PERFORMANCE OF COHESION POLICY 2007–2013  
YEAR 1 – 2011**

**TASK 1: POLICY PAPER ON RENEWABLE ENERGY AND  
ENERGY EFFICIENCY OF RESIDENTIAL HOUSING**

**LATVIA**

**VERSION: FINAL**

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**(BICEPS)**

**A report to the European Commission  
Directorate–General Regional Policy**

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## LIST OF ABBREVIATIONS

- CF – Cohesion Fund
- EEN – Expert Evaluation Network
- ERDF – European Regional Development Fund
- ESF – European Social Fund
- KTOE – kilo tonnes of oil equivalent
- OP – Operational Programme
- PJ – Petajoule
- MK – Cabinet of Ministers in Latvia
- MKN – Regulations of the Cabinet of Ministers
- EM – Ministry of Economy in Latvia
- RES – Renewable energy sources

## 1. EXECUTIVE SUMMARY

Latvia's energy situation is characterised by: one of the highest shares of renewables in the EU; rather high energy dependency; and a large stock of energy inefficient housing and inefficient centralised heating systems that supply the heat. Latvia's policy objectives are to further increase the share of renewables to 40% by 2020, to reduce energy dependency (especially dependency on Russia) and to improve energy efficiency. These aims are consistent and mutually reinforcing – in particular, since renewables are mainly domestically produced more renewables will reduce energy dependency.

Both renewables (EUR 67.2 million) and energy efficiency (EUR 90.2 million) were an important part of OP3 'Infrastructure and services'. However, the global financial crisis and the particularly deep recession that hit Latvia from 2008 resulted in a redefinition of strategic priorities in early 2009 which led to reallocation of EU funds as between activities. As a result, all EU funded RES development was suspended while funding for Energy Efficiency and Cogeneration was increased to EUR 182 million (from EUR 60 million originally). The rationale was that the reallocation would have a faster effect on economic activity and employment.

Implementation has been active, with EUR 158 million (87%) of the total reallocated funding as of the end of 2010 committed to tendered projects and EUR 55 million (30%) signed under 197 project contracts. Activity has accelerated in 2011, especially in the improvement of heat insulation of multi-apartment residential building, following a successful publicity campaign in 2010.

Much of Latvia's apartment housing stock was constructed in the Soviet era and is notably energy inefficient and in the absence of ERDF funding it is unlikely that there would have been much progress in improving energy efficiency. In particular at present prices in the housing market (which in Latvia has developed only in the past decade) currently do not include a component that reflects the energy efficiency of a property.

There is no overall coherent rationale stated in policy documents for public intervention in RES or in energy efficiency – rather there is an implicit assumption that if there are national targets (as in RES) public intervention is needed to promote actions that will help to achieve targets.

Apart from support from EU funds (which comes in the form of co-financed grants) the main form of support for RES is through the purchasing prices Latvenergo (the state electricity monopoly) pays for energy generated by RES. The precise relationship of these prices to costs or profitability is not clear.

## 2. NATIONAL POLICY

### Background

Three empirical factors shape Latvia's energy policy, especially in the areas of renewables and of energy efficiency of residential housing:

- The Latvian share of renewable energy sources (RES) is the one of the highest in the EU 27.
- Latvian energy dependency is regarded as high<sup>1</sup>, especially its dependence on Russia<sup>2</sup>.
- The stock of housing inherited from the Soviet Union is particularly energy inefficient as are the centralised heating systems which supply households.

Annex Figure 1 shows the shares of primary energy sources in Latvia over 2000–2009 including the dynamics of self-sufficiency (the converse of dependency) where it can be seen that self-sufficiency has hovered at around 30% over the period. Annex Table A shows that share of RES in Latvia's energy supply traditionally has been high and in 2009 made up 35.8% of the total final energy consumption (according to Eurostat the highest share of RES in the EU27 in 2009)<sup>3</sup>.

Heating of buildings represents a major energy consumption factor and a significant cost in Latvia's climate. From the total consumed energy balance, 63% is energy for heating and approximately 70% of this is generated in centralized heating systems, produced by cogeneration plants (electricity + heat). Moreover, households consume 75% of this centrally produced heat<sup>4</sup>. As a result of the age and poor technical condition of the centralised systems the average efficiency of heat generation in Latvia is only 70%, while the generally accepted efficiency rate in heat generation is 92%. In addition, heat loss from distribution networks on average in Latvia is 22%, nearly double the accepted rate of 12%<sup>5</sup>.

### Policy

These background factors give rise to three overall energy policy aims: i) to further increase the share of renewables – the Latvian EU 2020 renewables target of a 40% share by 2020; ii) to reduce energy dependency; and iii) to improve the energy efficiency of residential housing and public buildings.

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<sup>1</sup> In 2008 Latvia was ranked 11<sup>th</sup> out of the EU27 in energy dependency, see [www.energy.eu](http://www.energy.eu).

<sup>2</sup> Russia was the source of 32% of Latvian energy imports in 2009.

<sup>3</sup> [http://epp.eurostat.ec.europa.eu/cache/ITY\\_PUBLIC/8-11042011-AP/EN/8-11042011-AP-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_PUBLIC/8-11042011-AP/EN/8-11042011-AP-EN.PDF)

<sup>4</sup> The public sector (government buildings, schools, hospitals, etc.) and industry consume the remainder.

<sup>5</sup> [http://ec.europa.eu/energy/renewables/transparency\\_platform/doc/national\\_renewable\\_energy\\_action\\_plan\\_latvia\\_en.pdf](http://ec.europa.eu/energy/renewables/transparency_platform/doc/national_renewable_energy_action_plan_latvia_en.pdf)

Aims i) and ii) are linked since, in practice, a higher share of renewables means a switch to local energy sources such as local wood, biomass, biogas, as well as wind and recycled energy sources<sup>6</sup>.

Policy on energy production from RES is defined by various regulations of the Cabinet of Ministers. The regulations set out the system of licencing for producers and the obligation of Latvenergo (the state-owned unbundled electricity “monopoly” in Latvia) to purchase electricity produced from RES. The prices at which energy is purchased vary by RES type. The overall aim is to support energy production, which can supply base capacity production (bāzes jaudu)<sup>7</sup>.

There are no direct state subsidies for RES. Incentives mechanisms for RES energy production to date have included: quota allocations (regarded by the government as ineffective), reduced excise tax for biofuels and from 2010 a Climate Change Financing Instrument for promoting energy efficiency sourced from the sale of emissions quotas abroad.

For the present planning period 2007–2013, EU funding for energy production from RES (apart from cogeneration) has been suspended, so currently no grants are available for supporting production from RES.

### **The New Renewable Energy Law**

In February 2011, the Cabinet of Ministers approved the draft of the new Renewable Energy Law. The Law aims to promote sustainable renewable energy production and usage, ensure a stable long-term investment environment for renewable energy production and to create new and long-term support instruments for electricity generation from renewable resources. The Law thus provides the framework for achieving the 40% RES share in total energy consumption by 2020.

The Law, which remains subject to amendment, will introduce support instruments (mainly in the form of premium prices paid by Latvenergo) in the following areas to replace previous regulations:

1. Price subsidies for renewable energy production. Producers will receive a price premium for electricity purchased by Latvenergo. The premium is based on a formula that includes: (a) a scaled coefficient that varies with the scale of production (to provide incentives for smaller producers); (b) the expected

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<sup>6</sup> Hydro power will remain a major source of renewables especially in electricity generation but the scope for expansion is limited. Thus, while some development of small-scale hydropower in Latvia took place in the in the 1990s it was stopped in 2002 because of environmental concerns.

<sup>7</sup> [http://www.em.gov.lv/images/modules/items/EMZino\\_111010\\_AER%281%29.pdf](http://www.em.gov.lv/images/modules/items/EMZino_111010_AER%281%29.pdf)

reduction in emissions; and (c) a component that encourages use of agricultural livestock waste as a fuel for power production. It is expected that this support mechanism will encourage energy production from cogeneration plants.

2. A price premium paid by Latvenergo to qualifying small electricity producers which do not exceed 5 MW power. Again the idea is to promote small producers.
3. The new Law clarifies the ability of municipalities to develop their own financing instruments for RES (subject to case-by-case approval by the Ministry of Finance). This is technically possible under existing legislation however implementation has been unclear.
4. Latvenergo will purchase surpluses from autonomous household energy producers.

A “Renewable Energy Resource Agency” is to be created that will manage the funding, research, monitoring, and provision of information about RES and heat efficiency.

In 2008 and 2009 government policy was changed to respond to severe economic downturn and tightened budget constraints. The re-defining of priorities in those circumstances led to expanding activities in energy efficiency and cogeneration and suspending activities aimed directly at RES in order to achieve the greatest impact with much less budget financing. Thus RES development activities such as wind, biomass, hydroelectric were suspended. On the other hand, as part of the economic stimulus strategy support from EU Funding was increased for energy efficiency, co-generation and energy management. Support for improving the energy efficiency of residential buildings was expected to provide a boost to the construction sector.

Energy policy in Latvia operates only at the national level, i.e. there is no regional variation.

### **3. ERDF AND COHESION FUND SUPPORT AND CONTRIBUTION TO NATIONAL POLICY**

The main ERDF measures to support RES and energy efficiency of residential housing as defined in National Strategic Reference Framework for 2007–2013 are shown in Annex Table B. The supported measures in RES correspond to national policy. However, the onset of the recession and the greatly reduced state budget led to a review of EU funds activities with the aim of shifting resources towards activities with a more direct effect on economic activity and in particular on employment. In February 2009 the Cabinet of Ministers approved amendments and changed programme allocations. The initial allocation planned to have energy projects under codes of intervention 39, 41, 42, 43 and 78, but the amendments resulted in only one active code, namely 43: Energy efficiency, co-generation, and energy management. Thus measures aimed directly at RES were cancelled and at the same time

total allocation for activities under code 43 was increased from EUR 60 million to EUR 182 million. The activities that kept or increased their funding are: Improvement of Heat Insulation of Multi-apartment Residential Buildings (3.4.4.1.); Improvement of Heat Insulation of Social Residential Buildings (3.4.4.2.); and Energy Efficiency of Centralised Heat Supply Systems (3.5.2.1.); and the Development of Cogeneration Power Plants Utilising Renewable Energy Sources (3.5.2.2.). Current allocations (grants co-financing public and private budget capital expenditures) are illustrated in Annex Table C<sup>8</sup>.

EU funds and the associated national public and private co-financing of funds expenditure have until 2010 represented the main source of support for RES and energy efficiency. Since 2010 there is funding available from the Climate Change Financial Instrument which has been aimed at energy efficiency and promotion of wood based fuels.

Annex Table D shows share of EU funding for each of the four funded activities – this ranges from 75% for activity 3.4.4.2, improvement of heat insulation of social residential buildings to between 40 and 60% of the other activities. In particular residents of multi-apartment residential buildings have to find financing of between 50% and 60%.

Annex Table E shows the progress in the supported activities. There it can be seen that, apart from cogeneration, 100% of the allocations have gone out to tender as of end 2010. However, signed agreements have shown slower progress. In activity 3.4.4.2, development improvement of heat insulation of residential buildings, nearly 75% of the allocated amount has already resulted in signed contracts and in cogeneration the figure is 62%<sup>9</sup>. However, in activity 3.4.4.1, improvement of heat insulation in multi-apartment residential buildings, it is only 13% and in activity 3.5.2.1, energy efficiency of centralised heat supply systems, signed contracts amount to just under 16% of allocations. Thus in the two main sources of heat inefficiency activity has been slow to start, but according to the Ministry of Economics, following the 2010 publicity campaign it has picked up in 2011, and the number of submitted agreements has fast increased.

As already indicated ERDF support for energy savings in multi-apartment dwellings was expected to provide employment to counter-act the deep recession in Latvia (to date there is no direct evidence on employment effects though, as of end 2010, 117 projects had been

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<sup>8</sup> Also EUR 32.4 million was shifted from OP3 to OP2 to be used for supporting high value-added research and technological development (R&TD) of new products, innovation and entrepreneurship. As part of the same process, the total financing available for Latvia from ERDF, ESF and CF together was increased to EUR 4.5 billion as compared with the EUR 4.5 billion presented in the background information provided for this assignment.

<sup>9</sup> In this activity Annex Table E shows signed agreements represent more than the share of the allocation that has gone out to tender. This is because the initial allocation was smaller and therefore only EUR 24 million was initially tendered, but after the allocation was increased it was not necessary to do a new tender. Therefore tenders of 50.5% of the allocation led to contracts of 62.2%.

contracted), as well as generating energy cost savings over the long term for the many households who occupy the large number of energy inefficient Soviet-era buildings.

Although there is no direct regional dimension in energy saving measures, the development of cogeneration using renewables can have an indirect effect. Not all towns in Latvia have the option of heating with natural gas because pipelines do not reach all places in Latvia. Renovating or replacing existing town heating plants by adding electricity generation as part of the energy generation process, is an effective approach for improving heating efficiency in Latvia.

#### **4. RATIONALE FOR PUBLIC INTERVENTION**

Before 2009, investment in improving the energy efficiency of housing was very limited. The public did not trust the claimed cost/benefit outcomes, nor were people willing to take on the debt burden that would be required to finance household energy efficiency projects. Since the well-publicised launch of the ERDF-supported programme in 2009, with grants covering 45%–60% of the project<sup>10</sup> public perception on the benefits of heat efficiency has improved. There is a weekly information campaign throughout towns in Latvia describing how to improve energy efficiency of housing. The campaign has an amusing style with four positive “e” aspects of renovating buildings for energy efficiency: economy, European policy, ecology and aesthetics. The rationale for public intervention in RES and energy efficiency is not a central feature of the ERDF programmes in this area. There is no reference to market failure or externalities as a rationale. The implicit position seems to be: if there the state has an RES target it is self-evident that there should be public intervention in order to achieve it. There some emphasis on the social and environmental returns from investment in heat efficiency by households and energy efficiency of co-generation.

There is an on-going public debate on these issues – how to reconcile increasing electricity demand with decreased supply from two key import sources that are being closed down by EU regulations: the Estonian oil-shale plant and the Ignalina nuclear plant in Lithuania. There is also debate on how best to achieve independence from Russian natural gas imports and so to reduce what is perceived to be a major political and economic risk.

On energy efficiency there has also been broad discussion on the various aspects of construction and building methods, technologies and materials. Information campaigns, publicised results of energy efficiency audits and examples in media have described numerous successful projects. Energy efficiency issues are addressed in internet portals and on every regional municipality website, including examples of the real savings possible on

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<sup>10</sup> The programme covers 80% of the cost of an energy efficiency audit of a multi-apartment building (with maximum cash limits), 80% of the cost of a technical survey of the building (with maximum cash limits), 80% of the project drafting and documentation costs (with maximum cash limits), and 20% of the project renovation costs.



heating bills. This all provides encouragement to initiate projects outside of the ERDF grant programme.

From the social aspect, the heating bill is one of the problems where social welfare has to provide assistance, therefore reducing heating bills wherever possible is welcomed by municipalities who are responsible for payment of social benefits.

There is a technical debate on the methods and technologies that provide energy improvements. There is evidence that observed improvements in energy efficiency after renovation depend very much on the quality of the construction or renovation works. Evaluation of the projects by experts from Riga Technical University have concluded that energy audit quality needs improvement and have offered to provide training to energy auditors and others operating in the field.<sup>11</sup>

## 5. RATE OF SUPPORT AND PROFITABILITY

In the Latvian RES Action Plan it is stated that the most supportable forms of RES are the more productive sources and the ones that can ensure base capacity needs. These factors determine the calculation of purchase prices the formulas for which are provided by Cabinet of Ministers Regulation Nr 262 (10.03.2010). Relevant factors include the size of energy production and for biomass electricity production there is a link to natural gas price, because it is used in cogeneration and produces heat energy. Maximum and minimum purchasing prices are shown in Annex Figure 2 where it can be seen that the highest price coefficient is for solar electricity, then biogas, then hydroelectricity, followed by wind, which is considered the least costly.

There is very little variation in the housing stock in Latvia and all regions are in a similar condition with regard to the energy efficiency of multi-apartment buildings, social housing buildings and the availability of cogeneration and wood-based fuel.

In general the rate of support is set by the availability of funding during a planning period. Fuel price fluctuations may demonstrate the need for measures to improve existing energy inefficiencies but have not affected support levels.

## 6. COSTS, PUBLIC SUPPORT AND PRICES

### *Renewable energy*

There is no publicly available information in Latvia on the actual cost of producing electricity from renewable resources. There are eight different Cabinet of Ministers regulations that govern the Latvenergo purchasing price for electricity generated by renewables. Each

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<sup>11</sup> [http://www.videszinatne.lv/attachments/175\\_LVAF\\_ataskaite\\_2.pdf](http://www.videszinatne.lv/attachments/175_LVAF_ataskaite_2.pdf) (p. 59).

specific type of RES has a different price calculation formula that also can vary according to the size, shape, location and specific circumstances of the producer. Presumably, the price formula is related to the expected costs associated with different sources but these costs are not publicly available. What we do have is a range of purchasing prices for different RES which is shown in Annex Figure 2. For example the prices paid for electricity generated by wind power vary between EUR 9.6 cents and EUR 18.2 cents per kWh. Thus we cannot infer a *rate of support* for different types of RES.

#### *Energy efficiency in residential housing*

In Latvia housing prices are influenced by location, building quality and convenience in terms of the type of heating fuel (gas, wood, electricity, etc.). Energy efficiency criteria are typically not specified in the real estate market listings and so energy efficiency of buildings as such does not appear to influence housing prices. There are no statistics available for any real analysis. There is no evidence that rents are influenced by energy efficiency.

## **7. CONCLUSIONS**

The ERDF programme has made a start on energy efficiency improvement, cogeneration development in rural towns and the refurbishment of central heating systems.

Latvia needs to achieve greater energy independence and using more renewable energy underpins that aim. Latvia has local resources and there are local factors that determine local solutions. To come up with the best approach requires further research and discussion. Examples from elsewhere are useful, but they cannot provide direct solutions for Latvia. Since the area of renewable energy and heat efficiency is relatively new, experience gained and lessons learned should improve the search for viable solutions.

ERDF funding is an essential part of the development support measures in Latvia because the current economics of RES and energy efficiency are not viable in a purely private sector market environment.

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[http://www.esfondi.lv/upload/FMProgr\\_290710\\_OP\\_ENG\\_update.pdf](http://www.esfondi.lv/upload/FMProgr_290710_OP_ENG_update.pdf) 281 lpp. Priority Themes, Table 41, angl. 2008.gadā apstiprinātais ESFondu finansējums, kas vēlāk mainījās

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## INTERVIEWS

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## TABLES AND FIGURES

**Annex Table A – Self-sufficiency and share of RES in total primary energy consumption in Latvia**

(%)	2000	2005	2006	2007	2008	2009
Self-sufficiency in total primary energy consumption	31.9	32.5	30.3	29.1	29.6	35.9
Share of RES in total primary energy consumption	30.4	32.2	30.1	28.8	29.4	35.8

Source: [http://www.em.gov.lv/images/modules/items/les\\_2009\\_.pdf](http://www.em.gov.lv/images/modules/items/les_2009_.pdf) "Latvijas Enerģētika skaitļos" and Ministry of Economy.

**Annex Table B – Latvia: Allocation and commitments of ERDF, ESF and Cohesion Fund (end 2009 – EUR million)**

<b>Renewable energy</b>	<b>Allocation</b>	<b>Commitments</b>
39 wind	10.0	
40 solar	0.0	
41 biomass	24.7	
42 hydroelectric, geothermal and other	32.5	
<b>Total</b>	<b>67.2</b>	<b>0.0</b>
<b>Energy efficiency in residential housing</b>	<b>Allocation</b>	<b>Commitments</b>
43 Energy efficiency, co-generation, energy management	60.2	19.7
78 Housing infrastructure	30.0	0.0
<b>Total</b>	<b>90.2</b>	<b>19.7</b>
<b>Total ERDF+ESF+Cohesion fund</b>	<b>4,498.0</b>	<b>1,874.8</b>
<b>Total ERDF+Cohesion fund</b>	<b>3,947.3</b>	<b>1,536.5</b>

Source: DG REGIO

**Annex Table C – Actual Allocation and Commitments in EUR from ERDF, ESF & CF (end 2010) for RES and Energy efficiency in Latvia (EUR million)**

<b>Code</b>	<b>Activity</b>	<b>Allocation</b>	<b>Commitment</b>
43	Improvement of Heat Insulation of Multi-apartment Residential Buildings (3.4.4.1.)	63.1	63.1
43	Improvement of Heat Insulation of Social Residential Buildings (3.4.4.2.)	9.8	9.8
43	Energy Efficiency of Centralised Heat Supply Systems (3.5.2.1.)	60.2	60.2
43	Development of Cogeneration Power Plants Utilising Renewable Energy Sources (3.5.2.2.)	48.9	24.7
	<b>Total (EUR)</b>	<b>182.1</b>	<b>157.8</b>

Source: Ministry of Economy, [http://www.em.gov.lv/images/modules/items/EMzin\\_2\\_29042011.doc](http://www.em.gov.lv/images/modules/items/EMzin_2_29042011.doc)**Annex Table D – Level of EU Funding support as a share of total EU+national funding**

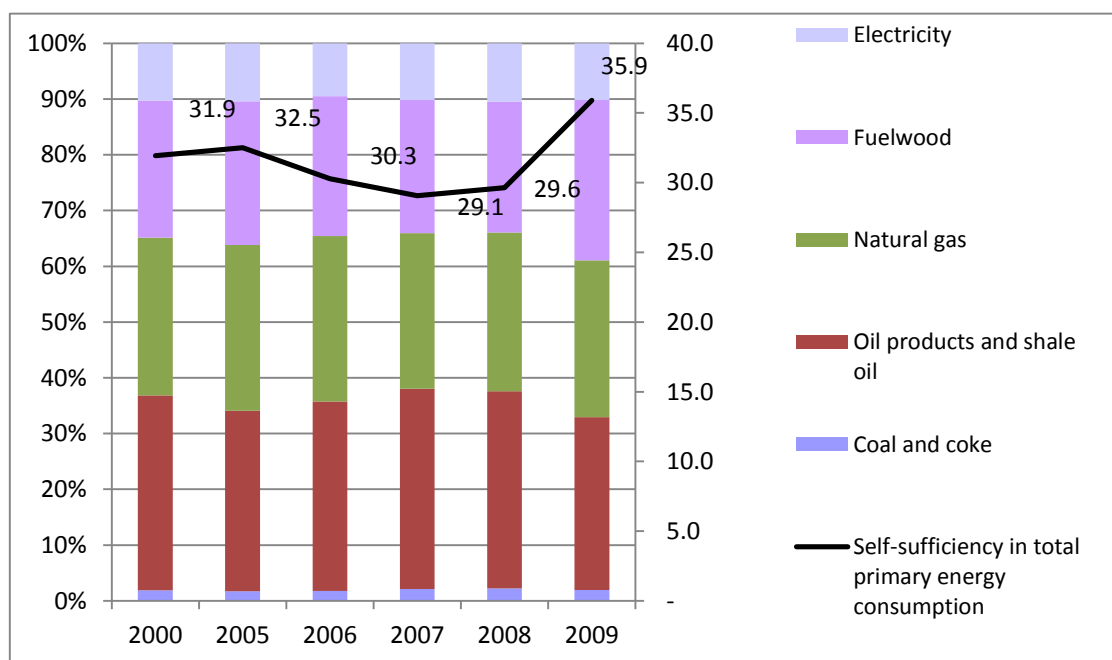
Improvement of Heat Insulation of Multi-apartment Residential Buildings (3.4.4.1.)	MK Regulation Nr 138 from 10.02.2009 and MK Regulation Nr 272	50%–60%
Improvement of Heat Insulation of Social Residential Buildings (3.4.4.2.)	MK Regulation Nr 1332 from 17.11.2009	75%
Energy Efficiency of Centralised Heat Supply Systems (3.5.2.1.)	MK Regulation Nr 842 from 31.08.2010.	40%–50%
Development of Cogeneration Power Plants Utilising Renewable Energy Sources (3.5.2.2.)	MK Regulation Nr 165 from 17.02.2009	50%

Source: Ministry of Economy, [http://www.em.gov.lv/images/modules/items/EMzin\\_2\\_29042011.doc](http://www.em.gov.lv/images/modules/items/EMzin_2_29042011.doc)

**Annex Table E – EU Funding Support for Energy efficiency and RES in Latvia at the end of 2010.**

Code	Activity	Allocation (EUR million)	Tendering		Signed agreements		
			Tendered (EUR million)	% of allocation	nr of contracts	value of contracts (EUR million)	% of allocation
43	Improvement of Heat Insulation of Multi-apartment Residential Buildings (3.4.4.1.)	63.1	63.1	100	117	8.2	13.3
43	Improvement of Heat Insulation of Social Residential Buildings (3.4.4.2.)	9.8	9.8	100	59	7.4	74.9
43	Energy Efficiency of Centralised Heat Supply Systems (3.5.2.1.)	60.2	60.2	100	11	9.5	15.8
43	Development of Cogeneration Power Plants Utilising Renewable Energy Sources (3.5.2.2.)	48.9	24.7	50,5	10	30.4	62.2
Total		182.1	157.8	87	197	55.5	30.0

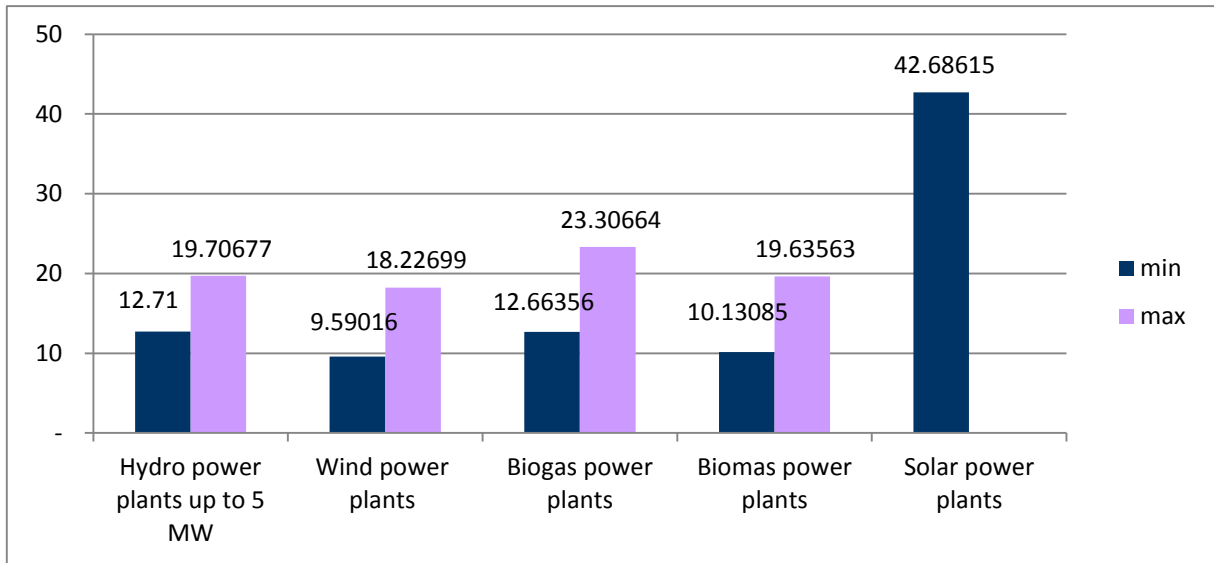
Source: Ministry of Economy [http://www.em.gov.lv/images/modules/items/EMzin\\_2\\_29042011.doc](http://www.em.gov.lv/images/modules/items/EMzin_2_29042011.doc)

**Annex Figure 1 – Relative consumption of primary energy resources in Latvia 2000–2009**

Source

Ministry of Economy Latvijas Enerģētika skaitļos" [http://www.em.gov.lv/images/modules/items/les\\_2009\\_.pdf](http://www.em.gov.lv/images/modules/items/les_2009_.pdf)

**Annex Figure 2 – Min and max prices in EUR cents/kWh for electricity produced from RES in Latvia**



Source: Ministry of Economy