

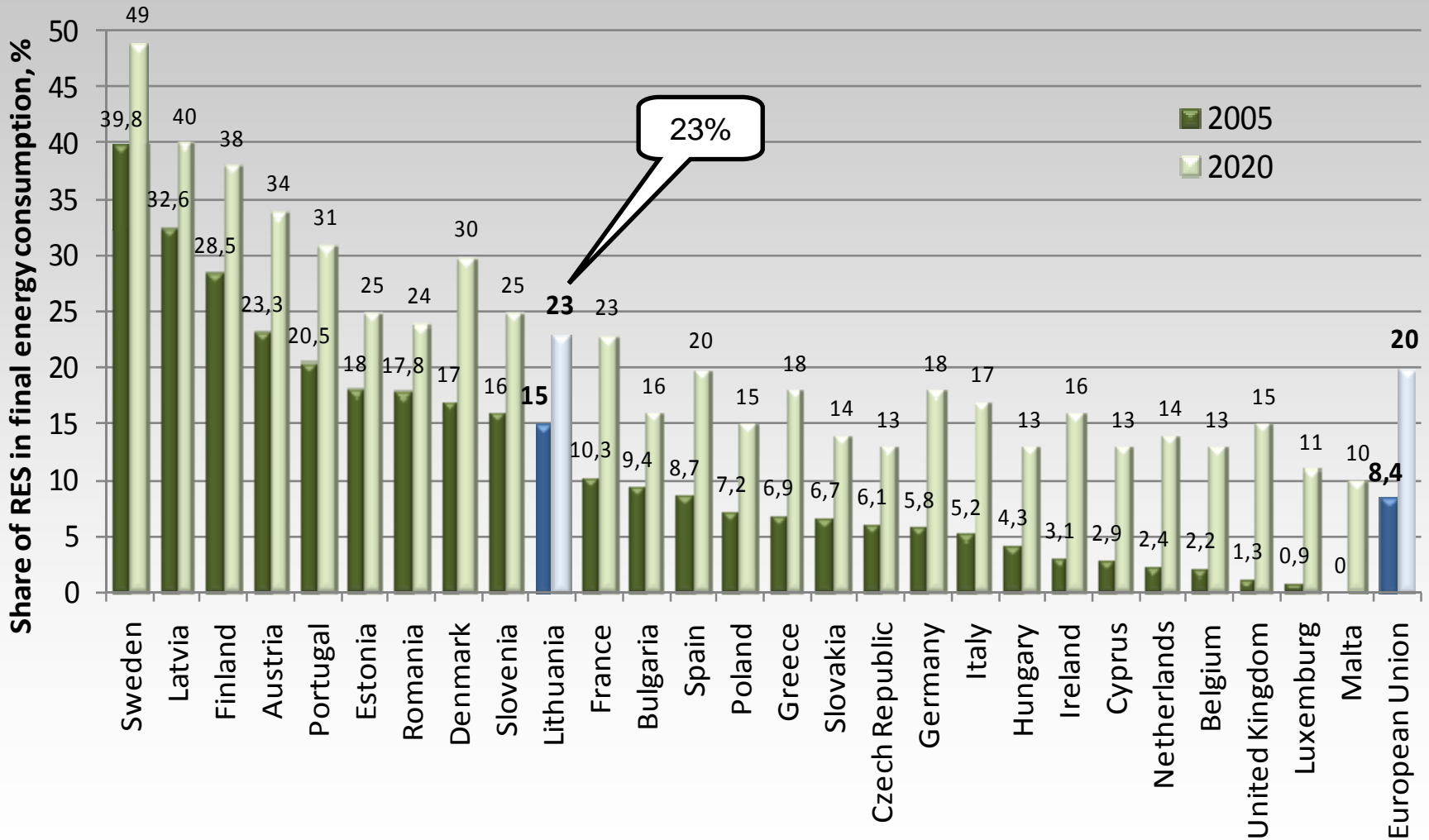


ENERGY AGENCY
LITHUANIA

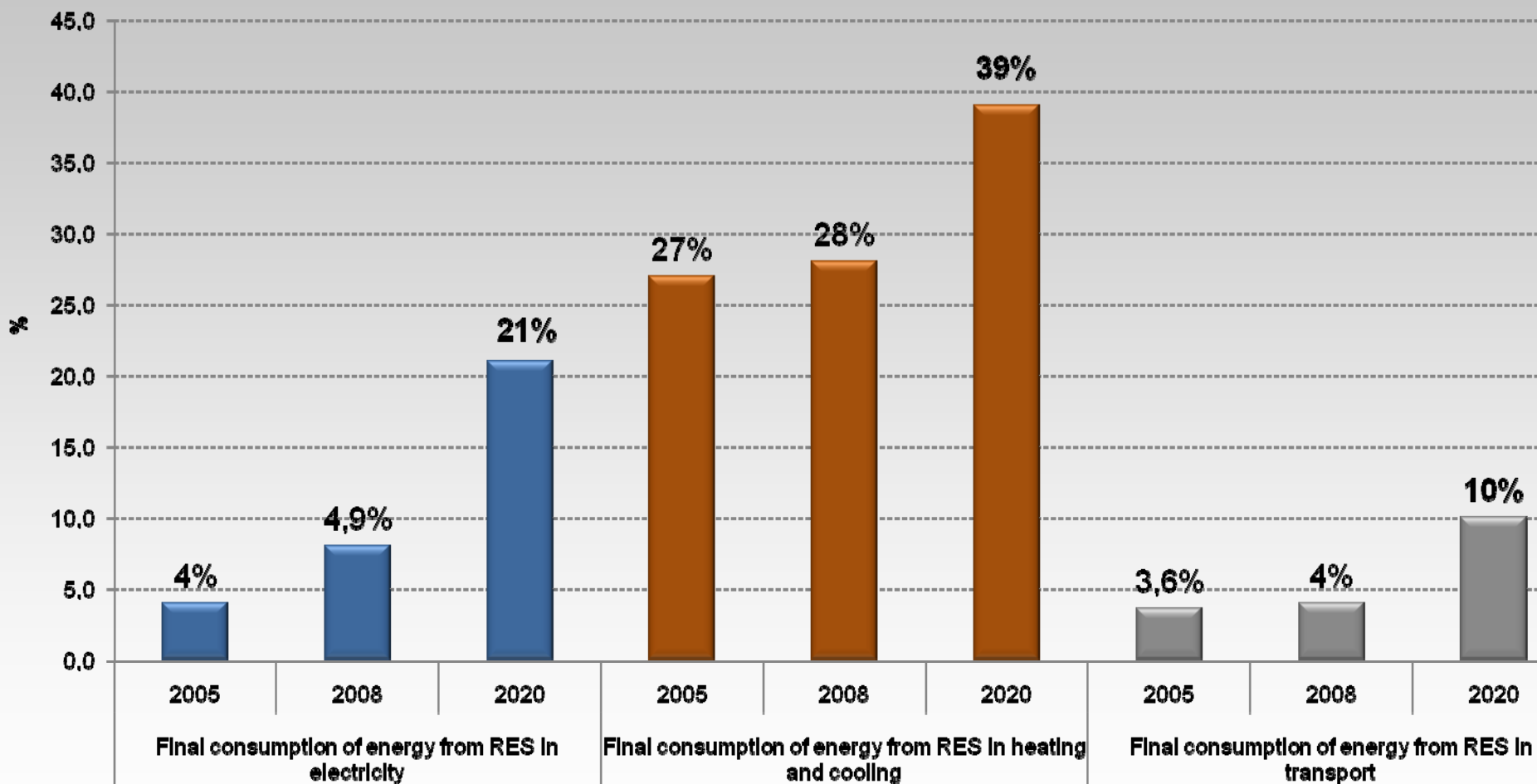
NATIONAL RENEWABLE ENERGY ACTION PLAN FOR LITHUANIA

Tomas Garasimavičius
Kaunas, 2010

EU and national RES targets



National RES targets 2020 by sectors

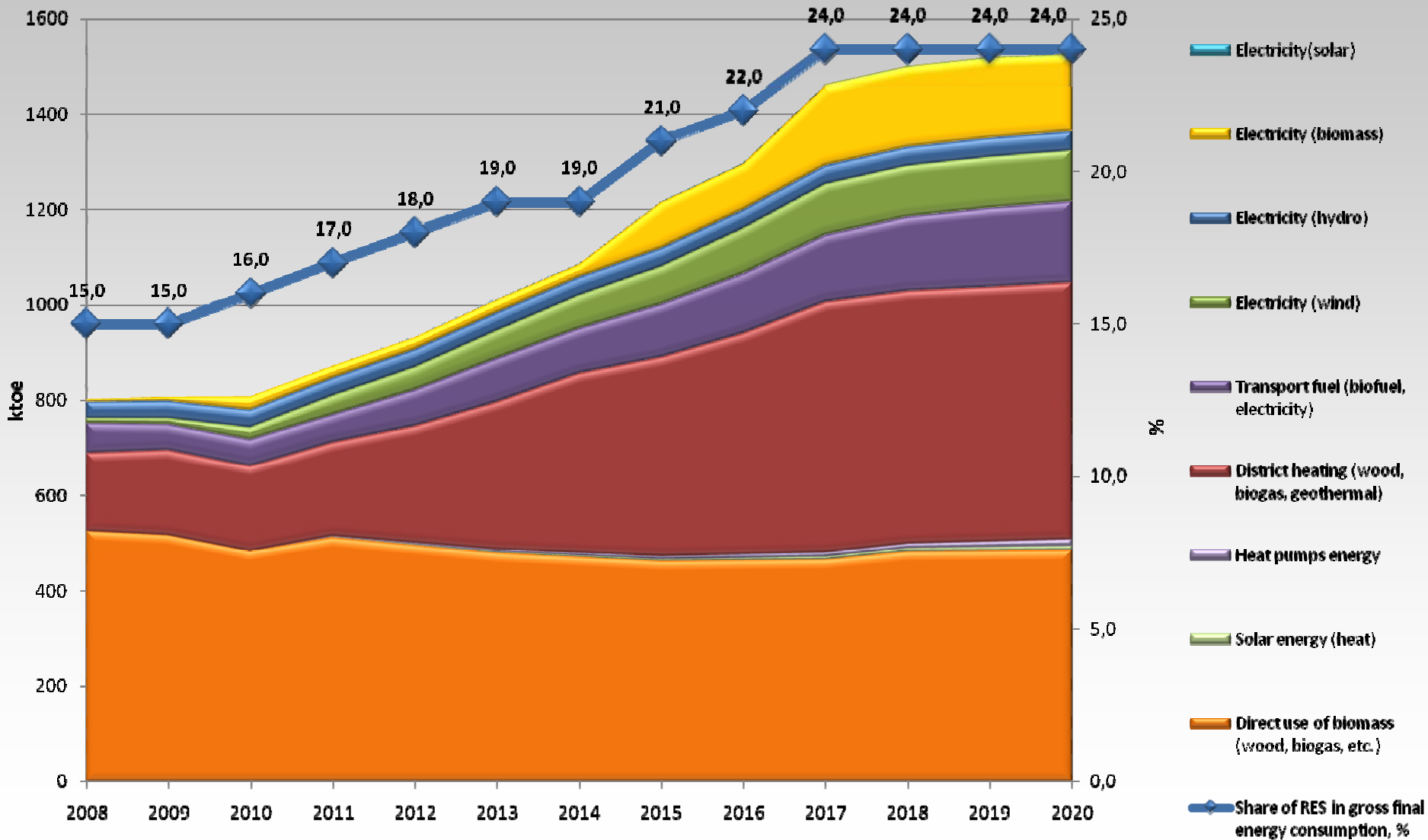




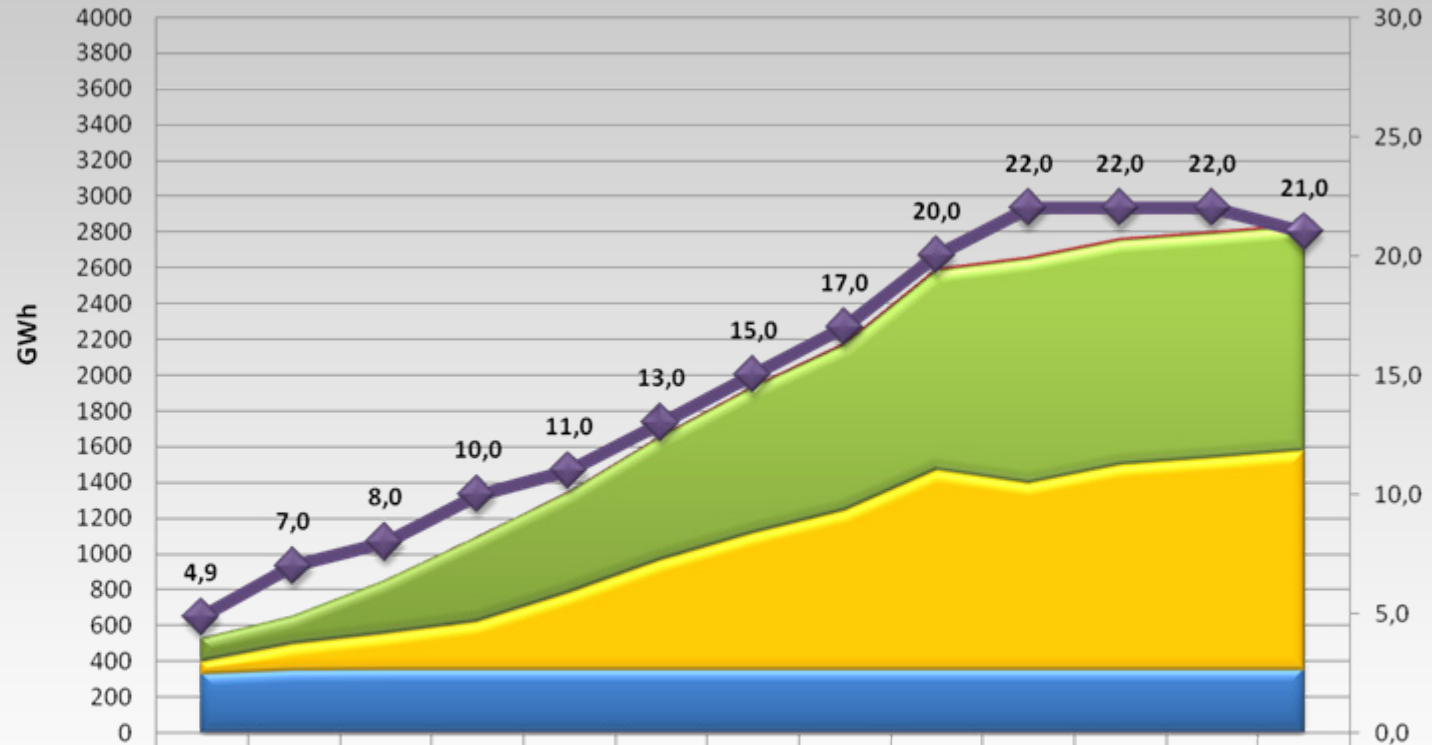
Bioenergy share in final energy consumption in 2020

BIOENERGY		ktoe
Bio-heat	Solid biomass	973
	Biogas	50
Bio-electricity	Solid biomass	70
	Biogas	35
Biofuels	Bioethanol/bio-ETBE	36
	Biodiesel	131
	TOTAL	1295
	Share in final energy consumption, 2020	20%
	Share in final energy consumption (excl. biofuel)	18,5%

Gross final consumption of RES in 2020



Final energy consumption from RES in electricity sector



Solar energy, GWh	0	0	0,0	2	3	6	9	13	15	15	15	15	15
Wind energy, GWh	131	157	297	473	563	688	813	924	1111	1250	1250	1250	1250
Biomass energy, GWh	69	147,0	202	268	429	612	761	888	1114	1040	1143	1181	1223
Hydroenergy (>10MW), GWh	329	350	353	353	353	353	353	353	353	353	353	353	353
Final consumption from RES in electricity, %	4,9	7,0	8,0	10,0	11,0	13,0	15,0	17,0	20,0	22,0	22,0	22,0	21,0

Quantitative targets for electricity 2020

Increase the total installed capacity:

- **wind power plants to 500 MW**
- **solar power plants to 10 MW**
- **hydropower plants with capacities < 10 MW to 40 MW**

Biomass power plants to 225 MW [1223 GWh]:

- **solid biomass – 162 MW [810 GWh]**
- **biogas – 62 MW [413 GWh]**



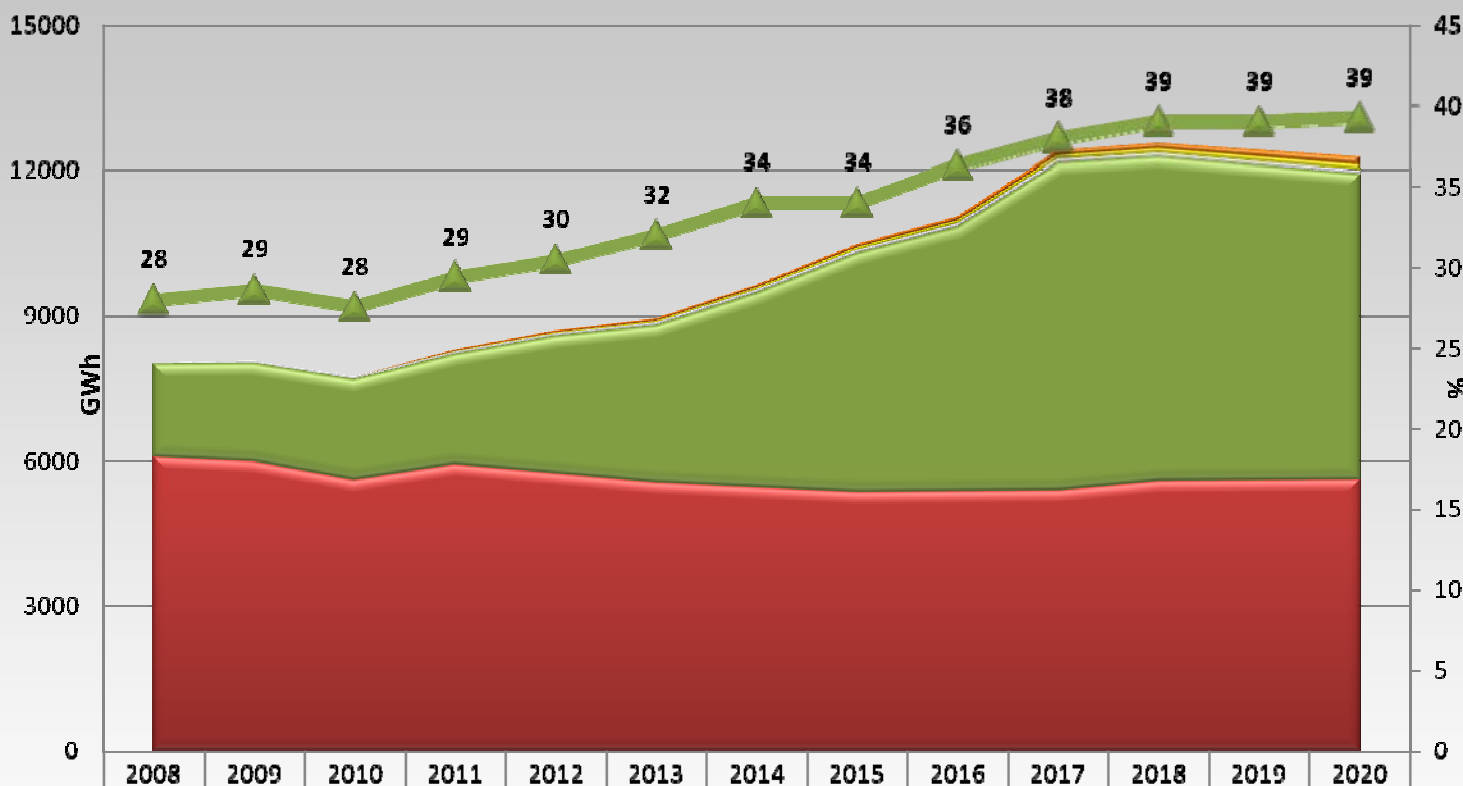
Support measures promoting bio-electricity

- Feed-in tariffs
- Network connection discounts for an RES electric power plant
- Priority transmission of electricity produced with the use of RES
- Benefit on environmental pollution tax
- EU structural support
- Rural Development Programme for Lithuania 2007–2013
- The Lithuanian Environmental Investment Fund & Programme of Climate change

Planned:

- Special National Programme for the Promotion of the Use of Renewable Energy Sources – **2011-03**
- create conditions for the construction of cogeneration power plants using municipal and other waste unsuitable for processing – **2010-2015**

Final energy consumption from RES in heating sector



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Heat pumps, GWh	0	0	0	37	47	56	63	69	87	105	116	142	169
Solar, GWh	0	0	0	11	22	33	44	55	65	75	84	94	105
Geothermal, GWh	4	30	35	35	35	47	47	47	47	58	58	58	58
Biomass, GWh	1919	2035	2095	2287	2845	3251	4019	4938	5461	6742	6674	6484	6293
Direct use of biomass, GWh	6102	6002	5612	5936	5750	5564	5465	5365	5384	5402	5597	5612	5627
Final consumption of RES in heating, %	28	29	28	29	30	32	34	34	36	38	39	39	39

Quantitative targets for bio-heat

- **Heat from biomass – 539 ktoe**
- **Direct use of biomass – 484 ktoe**
- **Heat pumps – 14 ktoe**
- **Solar – 9 ktoe**
- **Geothermal – 5 ktoe**

Heat from biomass share:

- **in district heating – 50%**
- **in households – 39%**



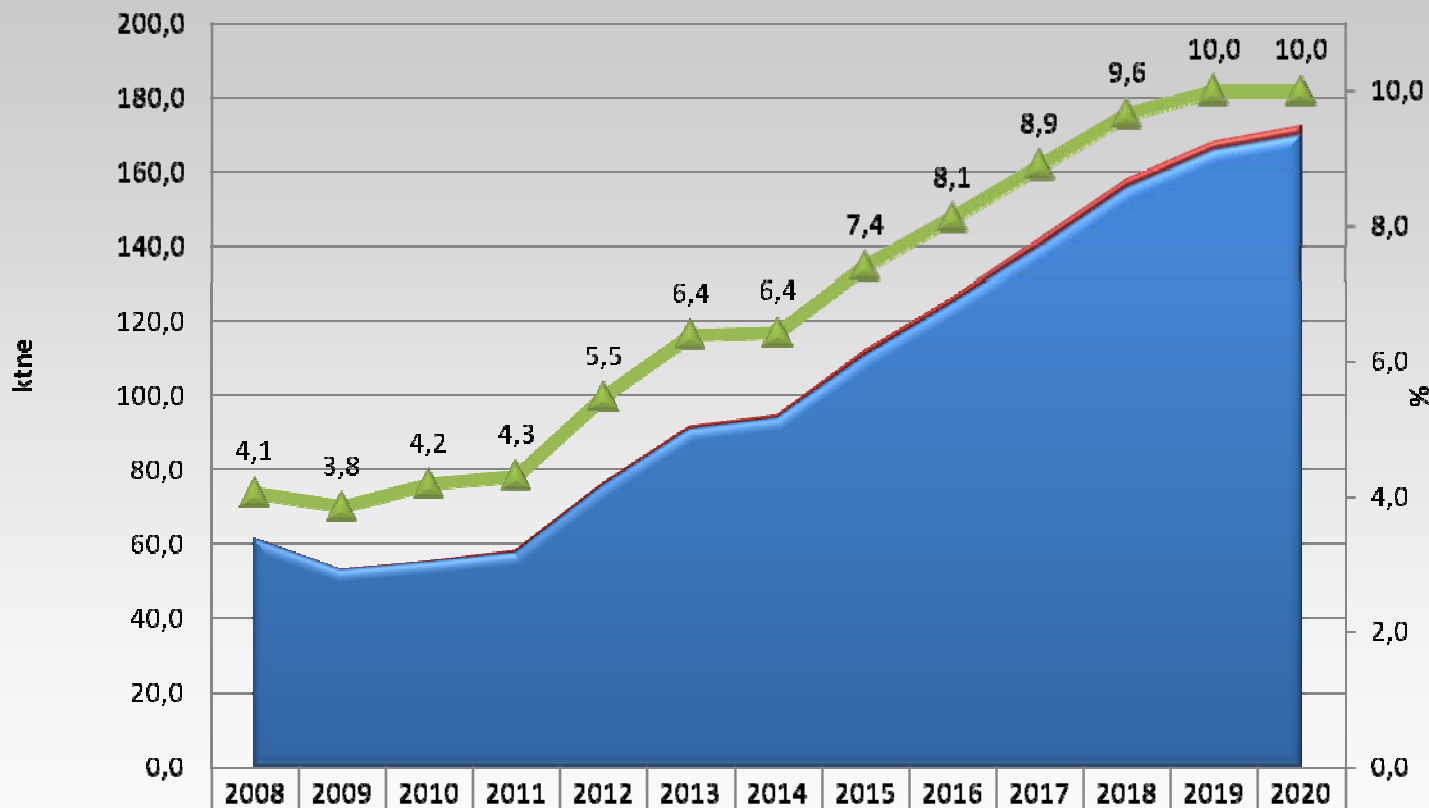
Support measures promoting bio-heat




- EU structural support
- Rural Development Programme for Lithuania 2007–2013
- Benefit on environmental pollution tax
- The Lithuanian Environmental Investment Fund & Programme of Climate change

Planned:

- Special National Programme for the Promotion of the Use of Renewable Energy Sources – **2011-03**
- create conditions for the construction of cogeneration power plants using municipal and other waste unsuitable for processing – **2010-2015**
- prepare measures of financial support, which would promote the modernisation of heat production installations supplying heat to rural public buildings (schools, kindergartens, health care institutions, elderships etc), while adjusting these installations for the incineration of biofuel (wood, straw) including herbaceous plant biomass (grass granules) – **2011-2015**

Final energy consumption from RES in transport sector



 Electricity production from renewable energy sources, ktne	0,24	0,2	0,3	0,8	0,8	0,9	0,9	1,6	1,6	2,4	2,4	2,4	2,5
 Biofuel, ktne	61,7	53	55	58	76	91	94	111	125	139	155	165	169
 Final energy consumption of renewable energy sources in transport, %	4,1	3,8	4,2	4,3	5,5	6,4	6,4	7,4	8,1	8,9	9,6	10,0	10,0



Support measures promoting RES in transport

- Mandatory blending of biofuels into mineral fuels
- Financing of the production of biofuels

Planned:

- amend the obligatory requirements for oil products, biofuels, and liquid fuel while providing for greater use of fuels of biological origin in transport – **2010-12**
- prepare a quality standard for methane produced from biogas and used for motor fuels – **2014-12**
- prepare standards for biofuels and fuel mixes containing a percentage portion of biofuel blended into mineral fuel exceeding 10 % - **2014-03**
- to prepare measures encouraging the use of electric cars and cars using pure biofuels – **2012-12**
- prepare and implement measures creating conditions for and encouraging the use of excess electricity produced at nighttime in transport; to create and develop city infrastructure of cars using electricity – **2011-2015**



Measures to support use of biogas/biomethane

- evaluate the demand for the development of the infrastructure of the gas network and prepare legal acts, which would form favourable conditions for the supply of biogas of appropriate quality to natural gas networks - **2010-12**
- prepare and publish technical rules regulating the connection of biogas supply systems to the natural gas network – **2011- 09**
- prepare the draft rules for the equipping of installations producing and using biogas – **2011- 12**



Measures to increase biomass availability

- prepare financial measures promoting the use of lumbering waste for the production of energy – **2010-12**
- prepare forecasts of the use of biomass resources in the country until 2020 taking into account the import, export of biomass and the assessment of the impact of the use of biomass for the production of energy on other sectors (industry, agriculture etc), and to provide proposals regarding the creation of a system for the monitoring of this impact – **2012-12**
- conduct research intended for the improvement of forest fuel resources: to specify methods of the accounting of underwood and non-prospective underbrush biomass and the structure of lumbering waste (wood of branches, stumps, roots etc); to create a system for the accounting of stump wood resources; to analyze possibilities of the accounting and use of the living soil cover and litterfall for fuel in Lithuania – **2011-12**
- prepare proposals regarding the improvement of forest management methods in order to maximize the quantity of biomass produced from forest by the sustainable method – **2011-12**
- prepare legal and economic measures encouraging the cultivation of more energy plants in unused derelict and agricultural lands - **2010-2015**



Sustainability criteria for biofuels and bioliquids

Relevant raw materials: wheat (ethanol) ; rape seed (biodiesel)

Legislation:

Law on Renewable energy development (*draft*)

Law on the procedure for the control of the compliance of biofuels and other bioliquids with the sustainability criteria (*draft*)– (Ministry of Agriculture)

- Establishment of information system on land use (*Ministries of Agriculture and Environment*)

Sustainability controlling bodies :

- National paying agency (*Ministry of Agriculture*)
- State non food products inspectorate (*Ministry of Economy*)
- State tax inspectorate (*Ministry of Finance*)

Future plans: voluntary scheme (certification) by **2013**



ENERGY AGENCY
LITHUANIA

Thank you