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THE RENEWABLES INVESTMENTS IN BULGARIA: SEEN FROM A BUSINESS POINT OF VIEW

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Chairperson of Bulgarian Photovoltaic Association



The natural source of electricity!

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THE BULGARIAN RENEWABLE ENERGY SECTOR

MAIN STRUCTURE AND FIGURES

- As of March 2014 the sector consists of 1877 companies
- 2009 - 2012 investments in the sector: more than € 4 billion (around € 2 billion FDI in the years of economic crisis)
- Investments in the sector are entirely private and include investments in energy infrastructure, roads, social benefits
- About 10 000 direct employed people in the RES sector in 2012
 - highly technological and fast-developing sector: at least 50% of the employed are highly qualified young specialists
 - A national know-how has been developed in the recent years, which is now being transferred abroad
- Following the European policy on climate and energy, Bulgaria could attract € about 5 billion additional investments creating 15 000 new jobs.



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NATIONAL RENEWABLE ENERGY ACTION PLAN

- 11 % RES share of electricity generation in the country (excl. pumped-storage hydroelectricity)
- 13 % estimated RES share of gross electricity consumption for 2013/2014 (20.8% is the target for Bulgaria by 2020)

Source: ESO EAD

National 2020 Target and Estimated Trajectory of Energy from Renewable Sources in Heating and Cooling, Electricity and Transport in the Reference Scenario (%)

	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
RES-H&C	15,9	16,5	17,3	17,9	18,5	19,8	20,8	21,9	22	22,3	23	23,8
RES-E	8,4	10,6	12,1	13,4	15	16,7	18,6	19	20,1	20,4	20,6	20,8
RES-T	0,1	1,3	1,8	2,5	3,3	4,5	5,8	7,1	8,4	9,4	10,1	10,8
Overall RES share	9,6	10,1	10,7	10,7	11,4	11,4	12,4	12,4	13,7	13,7	14,8	16

Source: Ministry of Economy, Energy and Tourism



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ANNUAL ELECTRICITY CONSUMPTION

Annual Gross Consumption (MWh)	37 510 416
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Total RES /excl.

pumped-storage hydroelectricity/

13,86% of gross electricity consumption

Wind Power Plants

3,25 % of gross electricity consumption

Photovoltaic Power Plants

2,13% of gross electricity consumption

Hydro Power Plants

/excl. pumped-storage hydroelectricity/

8,40 % of gross electricity consumption

Biomass

0,08% of gross electricity consumption



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ANNUAL ELECTRICITY PRODUCTION, PLANT TYPE

Total RES /excl.

pumped-storage hydroelectricity/

11,02% of total produced electricity

Wind Power Plants

2,58 %

Photovoltaic Power Plants

1,70%

Hydro Power Plants

/excl. pumped-storage hydroelectricity/

6,68%

Biomass

0,07%

Total	47 195 341
Nuclear Power Plants	15 784 796
Thermal Power Plants (lignite coal)	19 944 550
Thermal Power Plants (black and brown coal)	3 103 498
Thermal Power Plants (gas-fired)	2 337 885
Hydro Power Plants	3 974 387
Solar Power Plants	800 684
Biomass	31 657



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INSTALLED CAPACITY

Total RES /excl.

pumped-storage hydroelectricity/

19,30% of total electricity installed capacity

Wind Power Plants

4,92% of total electricity installed capacity

Photovoltaic Power Plants

7,36% of total electricity installed capacity

Hydro Power Plants /excl. pumped-storage hydroelectricity/

6,85% of total electricity installed capacity

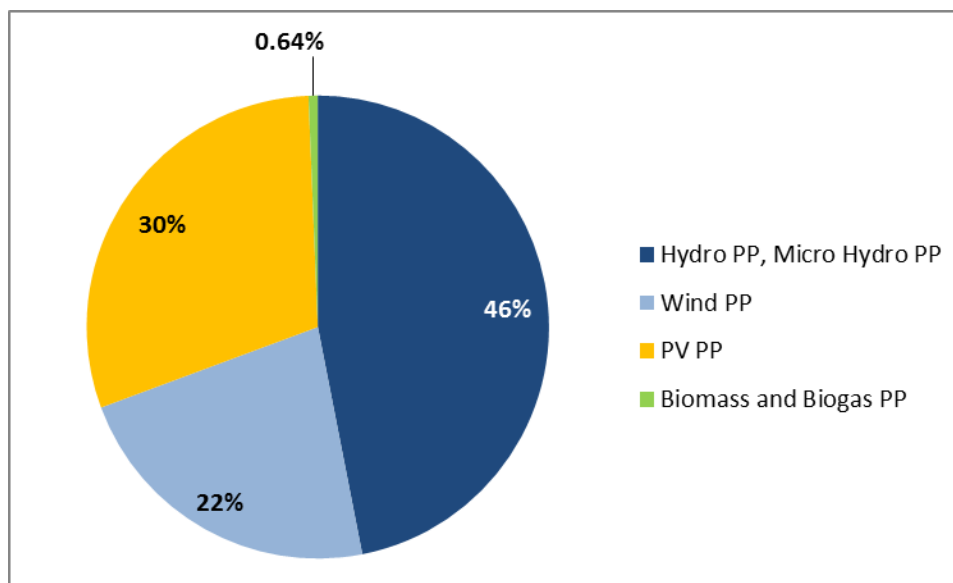
Energy Power Plants	Installed Capacity	Available Capacity at annual maximum
Nuclear Power Plants	2000	2000
Thermal Power Plants (lignite coal)	4 177	3 154
Thermal Power Plants (black and brown coal)	1 917	1 026
Thermal Power Plants (gas-fired)	794	401
Hydro Power Plants	3 161	3 115
Wind Power Plants	677	-
Solar Power Plants	1013	-
Biomass	23	23
Total	13 759	9 719

Source: ESO EAD, Annual Report 2012



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INSTALLED RES CAPACITY BY POWER PLANTS TYPE



To the grid of which ERD/ESO the installations are connected:

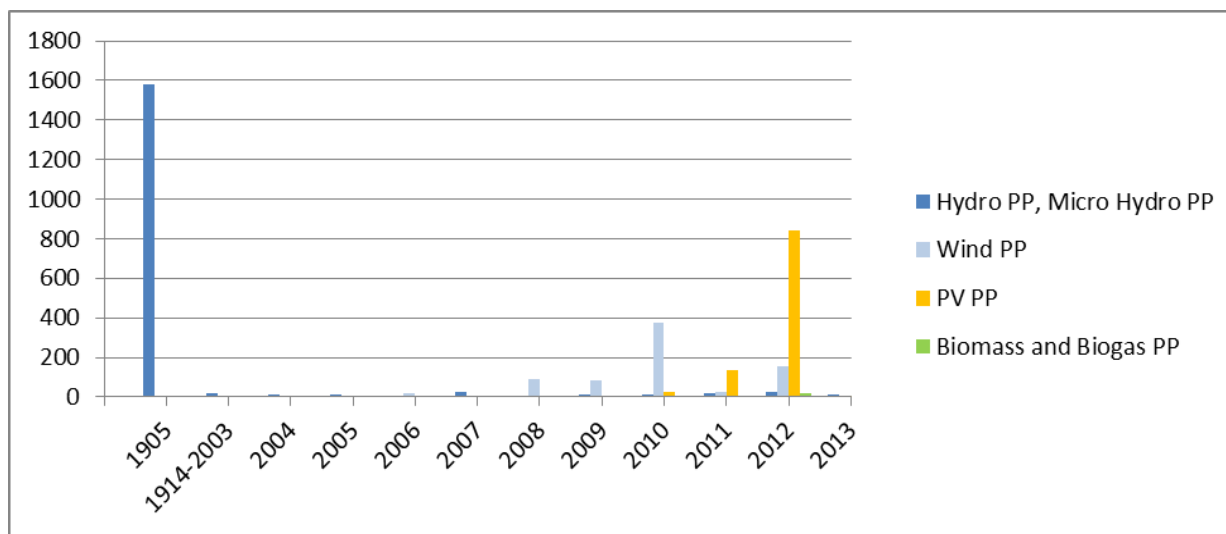
In MW	ESO	EVN	CEZ	Energo-Pro
Hydro PP, Micro Hydro PP	1470.8300	81.8674	185.0490	13.203
Wind PP	435.5	37.75	18.12	265.04
PV PP	275.781	494.866	140.475	100.854
Biomass and Biogas PP	13.189	1.83	6.334	0.285
Total:	2195.3000	616.3134	349.9780	379.382

Source: Sustainable Energy and Development Agency



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INSTALLED RES CAPACITY BY YEARS



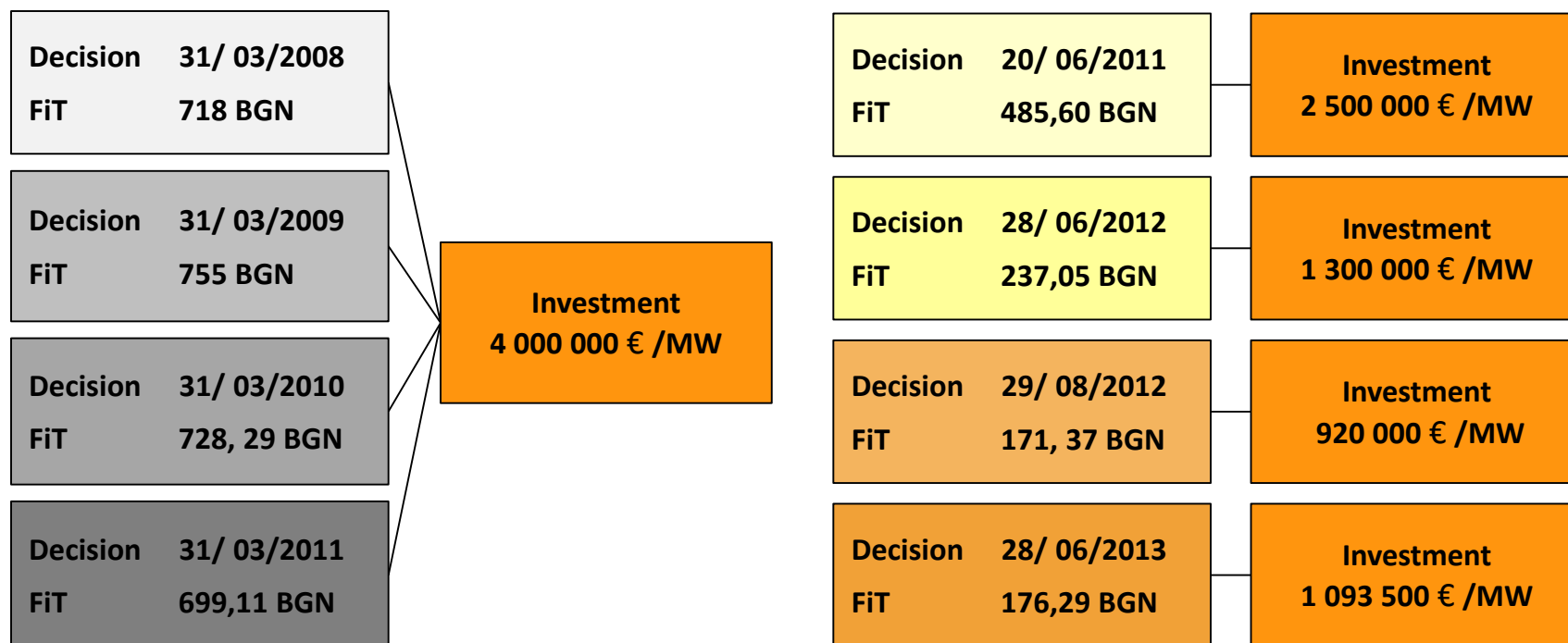
Source: Sustainable Energy and Development Agency

	Years	1905	1914-2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	TOTAL
Hydro	MW	1581,855	21,983	11,832	10,995	8,575	23,839	6,469	12,684	14,946	21,594	22,1384	14,039	1750,949
Wind	MW			1,575	1,01	16,875	7,15	90,385	83,81	376,405	22,8	153,5	2,9	756,41
PV	MW					0,02		0,48	7,10	23,50	135,00	843,80	2,10	1012
Boimass	MW						0,285				5,523	15,83		21,638



SUPPORT SCHEMES - PHOTOVOLTAIC

- Purchase prices are public and determined by the regulator in accordance with RESA
- Fixed period of 20 years of purchasing the produced electricity
- Contracts with financial institutions usually have a maturity 10-15 years





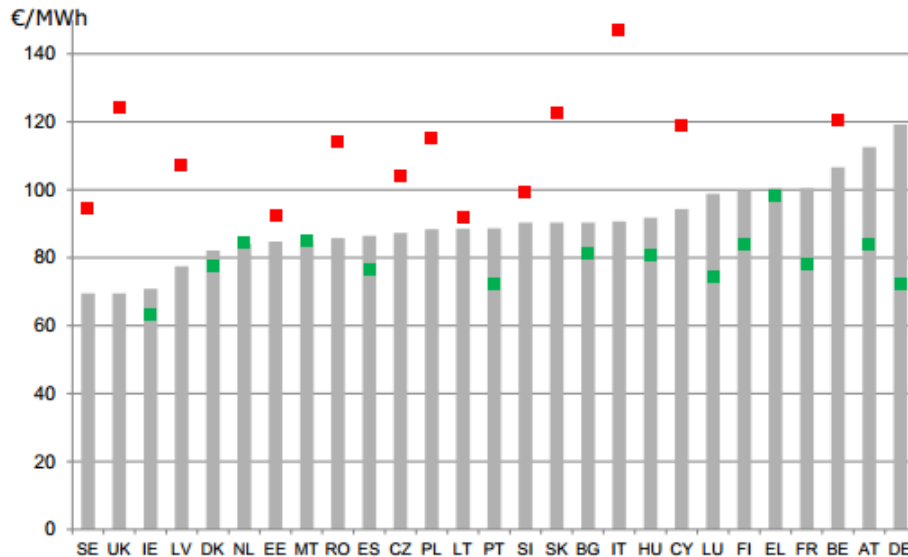
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PRODUCTION COSTS VERSUS SUBSIDIES FOR RENEWABLES

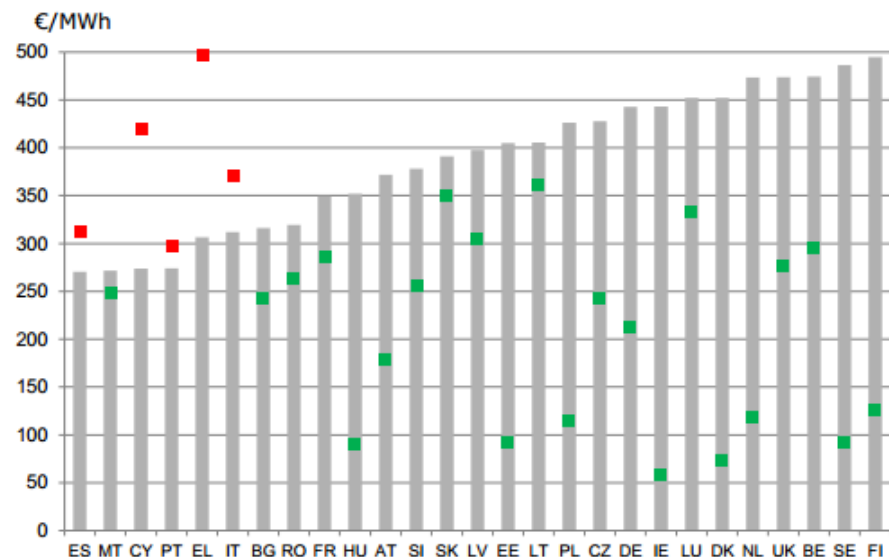
In Bulgaria subsidies for electricity from wind and photovoltaic power plants are below their production costs

averages, in €/MWh, latest year available

Wind energy on-shore



Solar energy (photovoltaics)

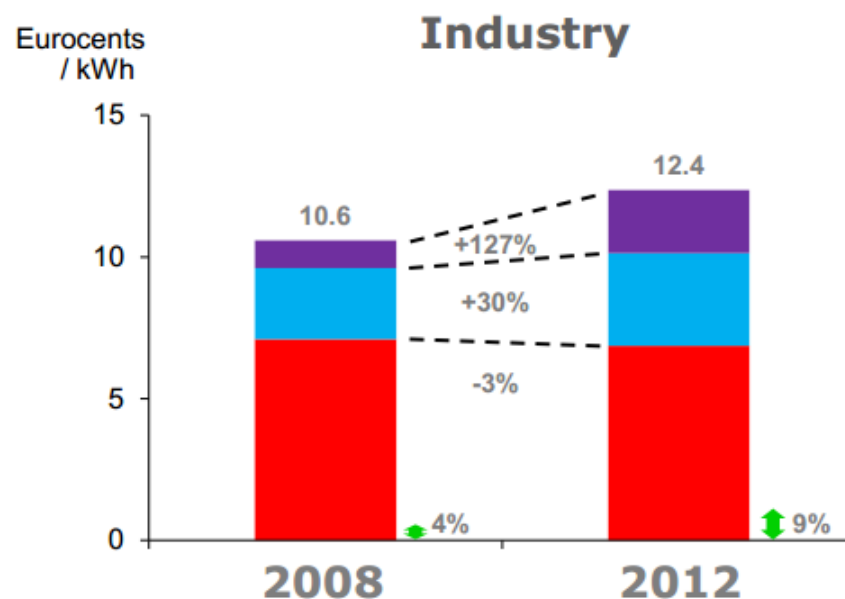
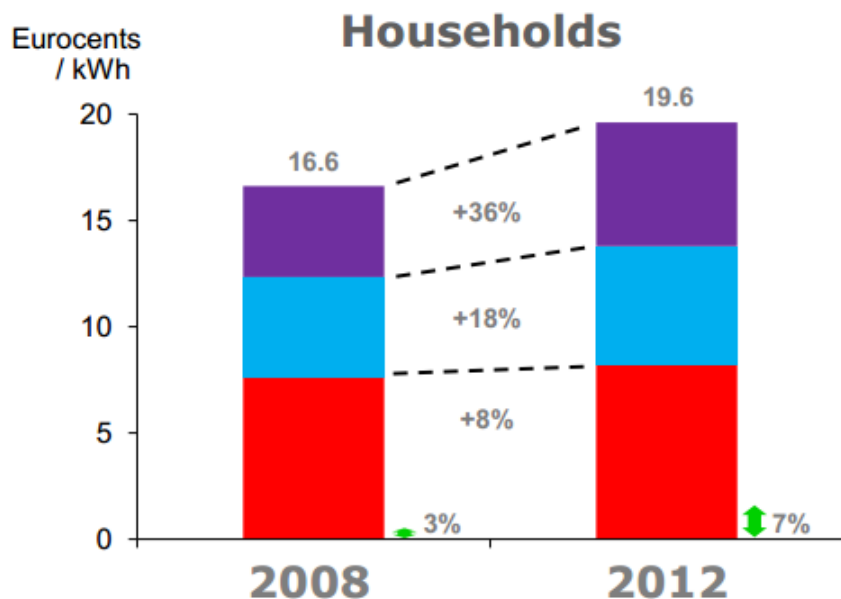




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EU ELECTRICITY PRICES, BROKEN DOWN, COMPARED TO SUPPORT FOR RENEWABLES

Climate policies are not the main driver of price increases



* excludes VAT and other recoverable taxes in the case of industry



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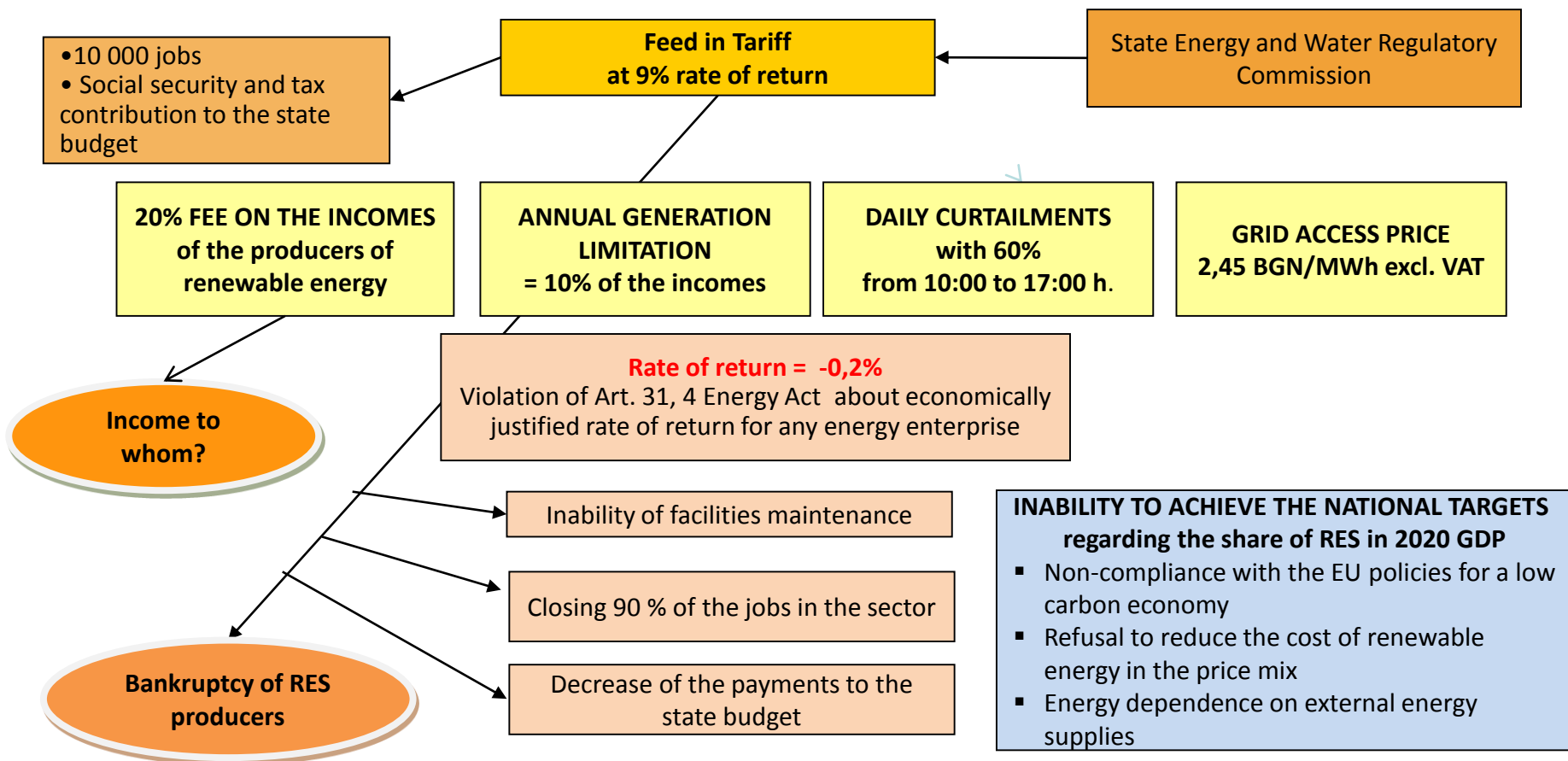
RENEWABLE ENERGY COUNTRY ATTRACTIVENESS INDEX, FEBRUARY 2014

Rank	Previous Ranking	Country	Overall Score	Rank	Previous Ranking	Country	Overall Score	Rank	Previous Ranking	Country	Overall Score
1	(1)	USA	74.4	16	(16)	Netherlands	52.0	31	(32)	Morocco	44.8
2	(2)	China	73.1	17	(17)	Portugal	50.7	32	(33)	Romania	44.6
3	(3)	Germany	66.8	18	(19)	Spain	50.6	33	(34)	Greece	44.0
4	(5)	Japan	64.1	19	(20)	South Africa	50.6	34	(29)	Finland	43.6
5	(4)	UK	62.8	20	(18)	Sweden	50.3	35	(38)	Saudi Arabia	42.3
6	(8)	Canada	58.9	21	(22)	Taiwan	49.4	36	(35)	Bulgaria	42.1
7	(9)	India	58.4	22	(23)	Thailand	49.2	37	(36)	Ukraine	41.1
8	(6)	Australia	58.2	23	(24)	Turkey	48.3	38	(37)	Czech Republic	40.8
9	(7)	France	57.9	24	(21)	Austria	48.2	39	(40)	Kenya	40.4
10	(10)	South Korea	54.9	25	(26)	Peru	46.8	40	(39)	Slovenia	40.0
11	(12)	Italy	53.7	26	(25)	Poland	46.1				
12	(14)	Brazil	53.4	27	(30)	Mexico	46.0				
13	(11)	Belgium	53.3	28	(27)	Ireland	45.2				
14	(15)	Chile	52.5	29	(31)	Israel	45.1				
15	(13)	Denmark	52.1	30	(28)	Norway	44.9				

Source: Ernst & Young, February 2014



CHALLENGES FOR THE INVESTORS: BULGARIAN PV SECTOR





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RES POLICY IN BULGARIA TODAY





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HOW DID IT GET TO THIS?

- Denial of implementation of the Third Energy Package
- Ignoring the recommendations by the European Commission and the World Bank made in their reports from May 2013
- Lack of a legitimate strategy for the electricity sector development
- Lack of independency of the energy regulator from political influence
- Lack of transparency in the energy pricing models
- Cross- subsidizing in the energy sector, implemented in the regulatory decisions
- Corruption and conflict of interest in the sector
- Lack of reform and modernization of the state-owned energy companies



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“SAVE THE ENERGY SECTOR” INITIATIVE

Investors, trade unions and industrial consumers united in the initiative

- Immediate introduction of energy board with financial engagement of international financial institutions - as a guarantee for reforms and observing of law in the energy sector.
- Elaboration of a matrix of reforms, with the participation of the energy enterprises, approved and financed by the international financial institutions, for execution of EU policies in the energy sector and long-term financial stability of the energy system.
- Approval of safety social package of direct monthly financial support for energy-poor households.
- Re-establishment of SEWRC as an independent regulator subordinate only to the rule of law and public interest through a procedure of approval by the Council of European Energy Regulators.
- Strong commitment of the law enforcement system for recovering the rule of law in the energy sector, eradicating corruption and conflict of interest in the management of state-owned companies in the energy sector.

Organizations standing behind the initiative:

Krassen Stanchev; Bulgarian-American Chamber of Commerce; Bulgarian Branch Chamber of Energetics; Bulgarian Wind Energy Association; Bulgarian Energy & Mining Forum; Bulgarian Industrial Association; Bulgarian Photovoltaic Association; German-Bulgarian Chamber of Industry and Commerce; EVN Bulgaria; ENERGO-PRO; Ilian Vassilev; Energy Management Institute; Corporate Trade Union Federation of Energetics "Podkrepa"; Confederation of the Employers and Industrialists in Bulgaria; Independent Trade Union Federation of Energetics in Bulgaria - Confederation of Independent Trade Unions in Bulgaria (CITU); CEZ Bulgaria; Bulgarian Electric Vehicle Association; Confindustria Bulgaria, the Association of Italian Entrepreneurs in Bulgaria; Union of Bulgarian Power Engineers.





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EUROPE'S PRIORITIES

Our goals

Competitiveness



Security of
supply

Sustainability

Why now?

Predictability
for policy-makers
and investors

Need for cost-effective
and joint solutions

Speaking with
one voice



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A RENEWED AMBITION FOR 2030

2020

20%
greenhouse
gas reduction

20%
renewable
energy

20%
energy savings

2030

40%
greenhouse
gas reduction

≥27%
renewable
energy

Energy
efficiency:
review in 2014

Dedicated
governance

National plans

Common indicators

Monitoring

THANK YOU FOR YOUR ATTENTION!



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