



Renewable energy sources penetration in most of BSEC countries

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Targets of RES Share

	Albania	Armenia	Azerbaijan	Bulgaria	Moldova	Romania	Russia	Serbia	Turkey	Ukraine
	%									
T1	38	20		16	17	24		27		11
T2		4.9								
T3			9.7							
T4							4.5			
T5									30	

T1 - in gross final energy consumption by year 2020 (Directive 2009/28/EC) –

http://www.energy-community.org/portal/page/portal/ENC_HOME/AREAS_OF_WORK/RENEWABLES/Acquis#targets ,

<http://www.environment-benefits.eu/pdfs/Armenia-ENPI%20Benefit%20Assessment.pdf>

T2 - in total generation (electricity, heat, transport) by year 2020

T3 - in total energy consumption by year 2020

T4 - in electricity generation by year 2020

T5 - in electricity generation by year 2023



Policy instruments

	Albania	Armenia	Azerbaijan	Bulgaria	Moldova	Romania	Russia	Serbia	Turkey	Ukraine
FITs	X	X	X	X	X			X	X	X
Premium scheme							X			
Capacity based scheme							X			
Quota						X				
Subsidies						X				
Obligatory purchase				X						
Minimum share of national sources										X
Green certificates						X				
Certificate / Guarantee of origin				X	X				X	
Privileged producers								X	X	
Tax exemptions	X									X
Certificate							X			
PPAs	X	X								

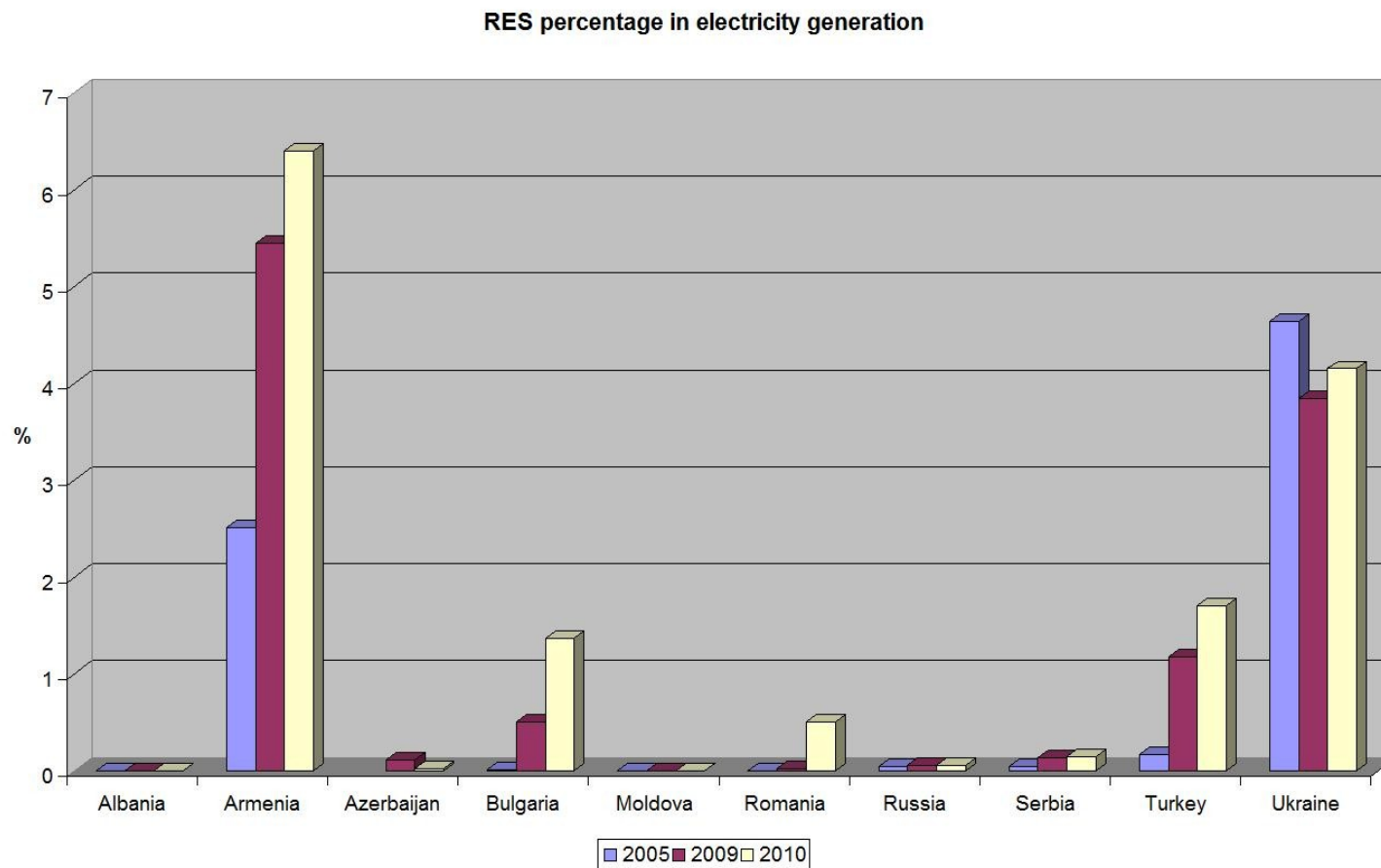


Feed in tariffs (c€/kWh)

Power plants	Albania (2007)	Armenia (2009)	Azerbaijan (2009)	Bulgaria (2010)	Moldova (2009)	Romania	Russia	Serbia (2013)	Turkey (2011)	Ukraine (2013)
Solar				7.60-40.53	F			23	18.53	42.65-46.53
Wind	N	7.23	3.97	7.60-9.74	F			9.5	10.17	6.46-11.31
Geothermal					F			7.5	14.63	
Biomass		7.60		8.59-10.18	F			11.4-13.6, F	18.53	12.39
Waste fired				6.10-13.92	F			8.5-9.2		
Biogas					F			12-16, F		
Landfill and sewage					F			6.7		
Fossil fuel fired CHP					F			7.6-10.4, F		
Hydro	F			5.66-10.23	F			5.9-9.7, F	10.17	
Small hydro		1.75 – 3.94	2.2		F					7.75

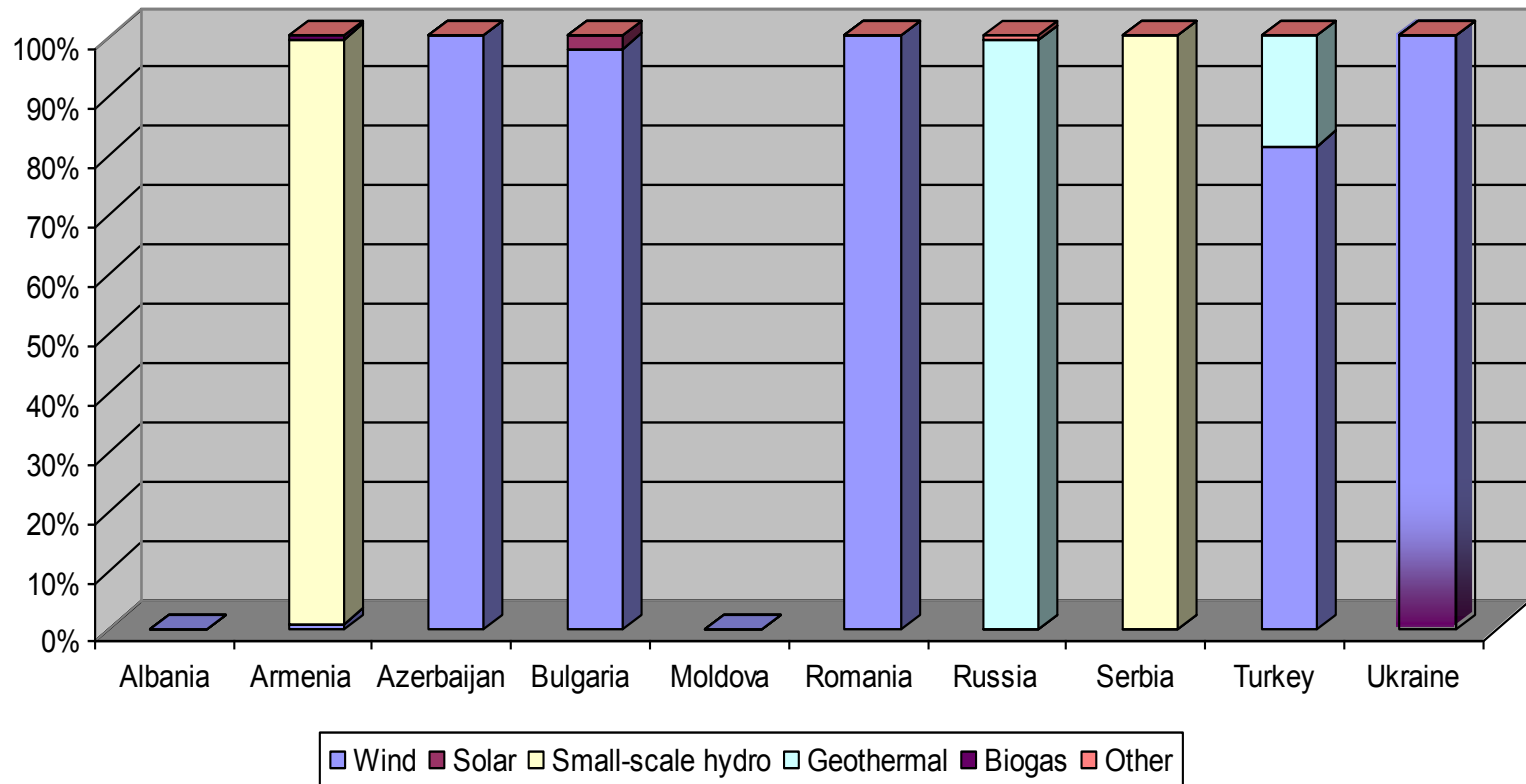
F – price is defined by formula, N – not established

RES penetration

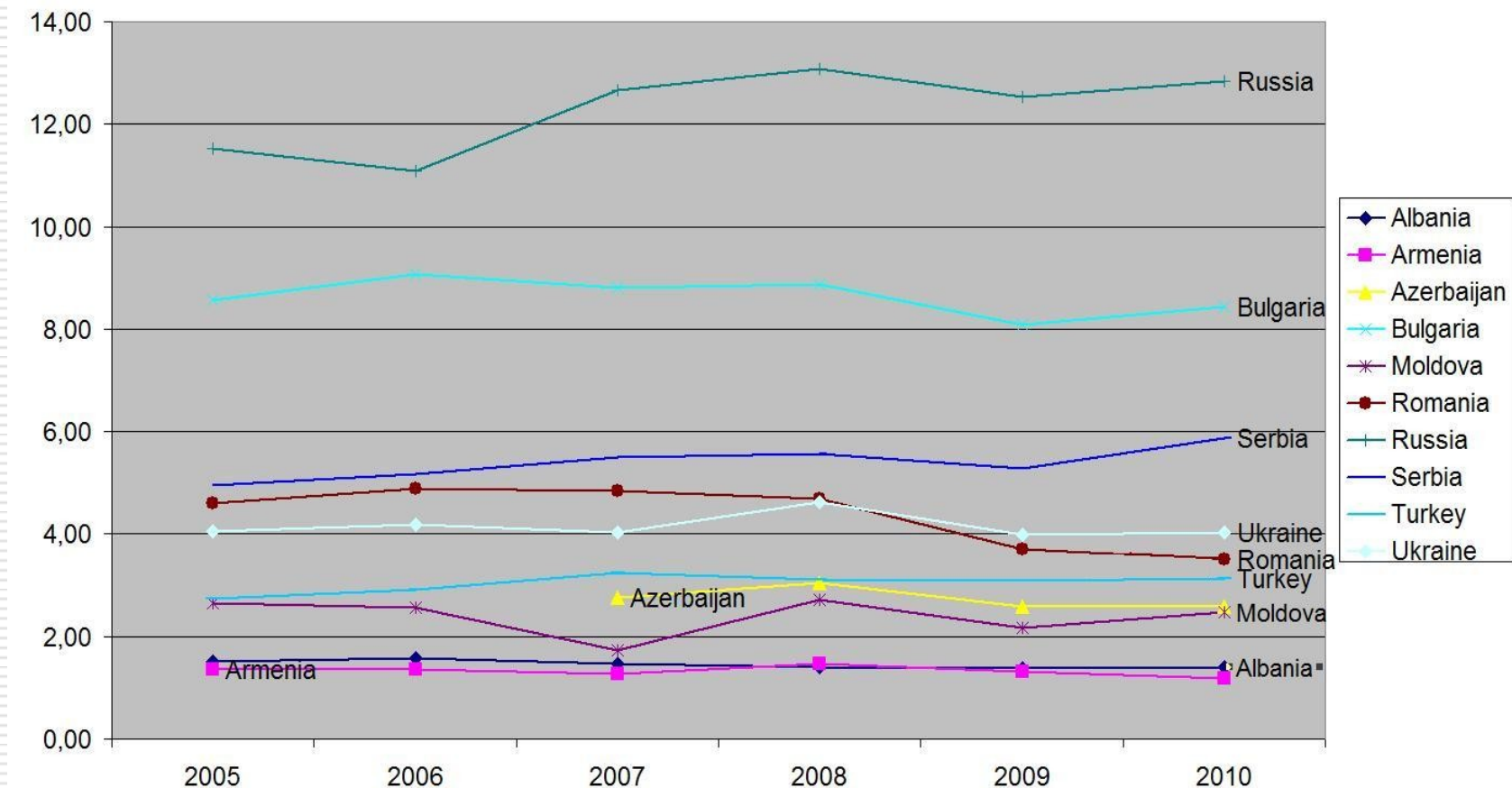


RES penetration per technology

RES electricity generation per technology in % for 2010



CO₂ emissions (Metric tons eq./capita)





Barriers

□ Albania

- Lack of regulatory framework (absence of a Law oriented specifically for RES)
- Low FITs (no grant for project profitability)
- Limited application of FITs (do not include solar, wind)
- Lack of experience of commercial banks in financing RES (UNDP)



Barriers

☐ Armenia

- Lack of regulatory framework

☐ Azerbaijan

- Lack of comprehensive, clear tariff methodology
- Lack of technical capacity for promoting RES investments
- Low FITs
- Poor electrical infrastructure



Barriers

□ Bulgaria

- Less incentives for RES use in heating
- High society costs

□ Moldova

- Partial transposition of the requirements of Directives 2001/77/EC and 2003/30/EC
- Delayed transposition of Directive 2009/28/EC
- Lack of financial and human resources, insufficient legislation to support the Agency for Energy Efficiency and RES



Barriers

☐ Romania

- None

☐ Russia

- Reforms of electricity sector started in 2008
- Delays in practical implementation of premium scheme
- Lack of: appropriate information about available RES; human resources; RES financial support programmes
- Institutional and regulatory barriers



Barriers

□ Serbia

- Absence of Law oriented to promotion of RES
- Limited availability of modern technologies for RES
- Partial transposition of Directive 2001/77/EC, but full transposition of Directive 2009/28/EC with updated Energy Law (OJ 57/2011)
- Low FITs and administrative procedures discourage investors
- Absence of long term contracts



Barriers

□ Turkey

- Low FITs compared to EU countries
- Administrative barriers (authorization, licensing, construction of projects)
- Problematic technological development and localization of RES technologies

□ Ukraine

- Administrative problems (installation procedures, rules for grid access)
- Uncertainties regarding “Green” tariff for concrete RES projects



Conclusions

- ☐ Ambitious targets
- ☐ Slow rates of RES penetration
- ☐ Insufficient regulatory framework
- ☐ Inadequate capacity building
- ☐ Low investment incentives



Thank you for your attention



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