

Economic growth and green investments in the Balkan context *- the example of renewable electricity (RES-E) -*

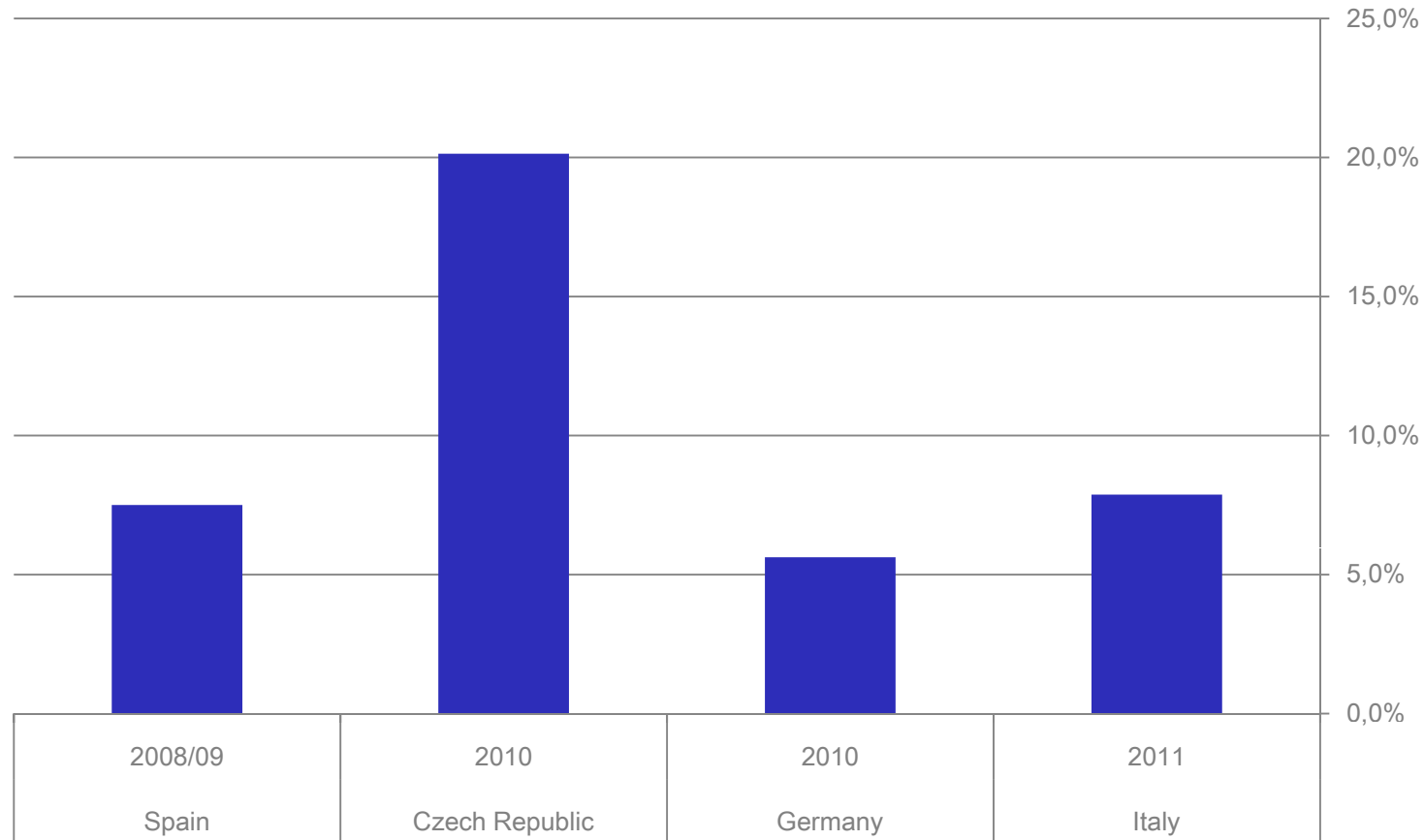
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Balkan Policies for Green Economic Growth
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- Renewable is not alternative energy anymore
- Significant and immediate potential gains from reduced fossil fuel import dependence and local industry development
- Transparent and smart regulation needed to enhance RES-E investment opportunities in the region, including Bulgaria

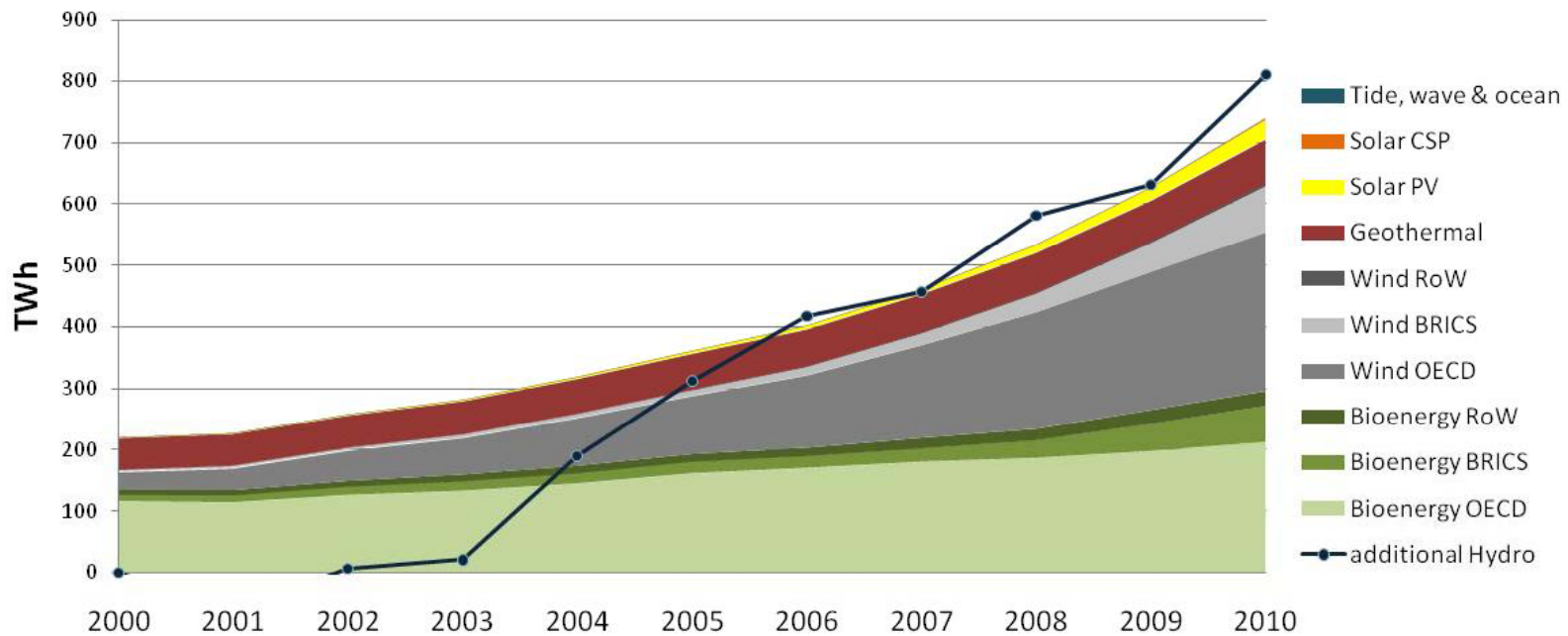
Renewable is not *alternative* energy anymore

PV's share of total business investment



But a big business with macroeconomic relevance

Strong Growth in RE Electricity ... and shift to Asia

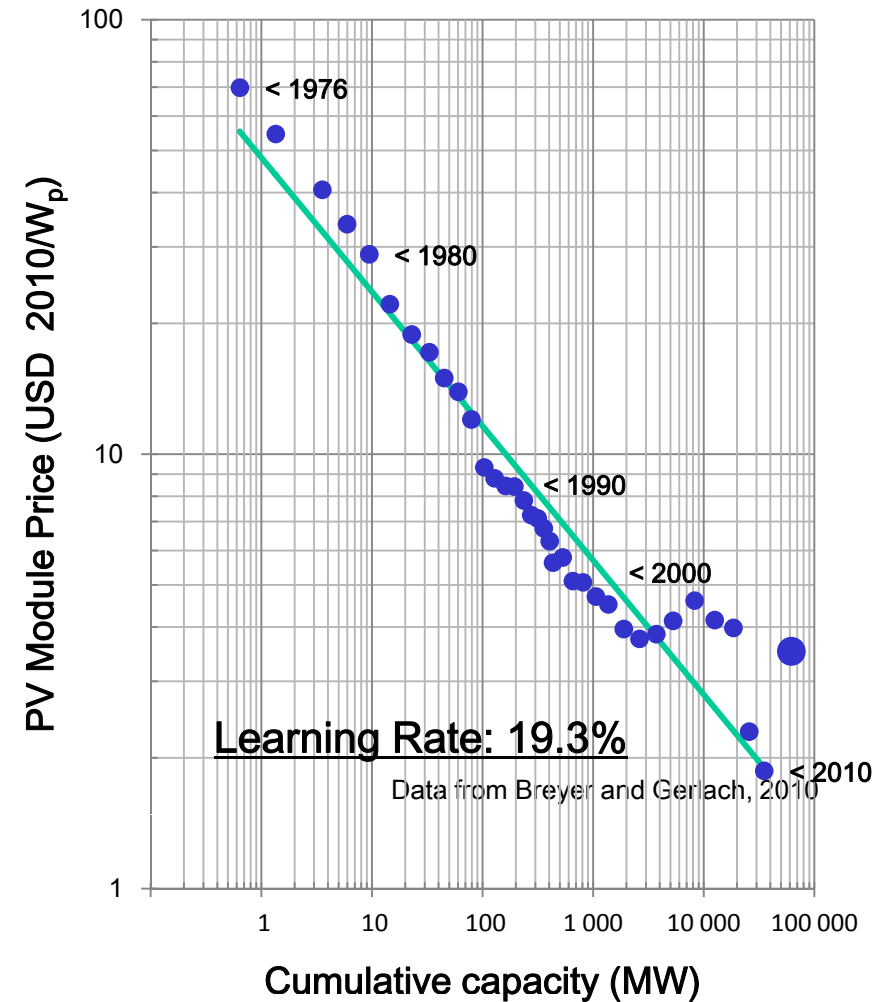


	Wind	Bioenergy	Solar PV	Hydro	other
<i>Generation 2010 [TWh]</i>	338	296	31	3503	74
<i>CAGR 2005-2010 [%]</i>	26.5%	8.8%	50.8%	3.1%	4.6%

Source: Mueller, IEA, 2012

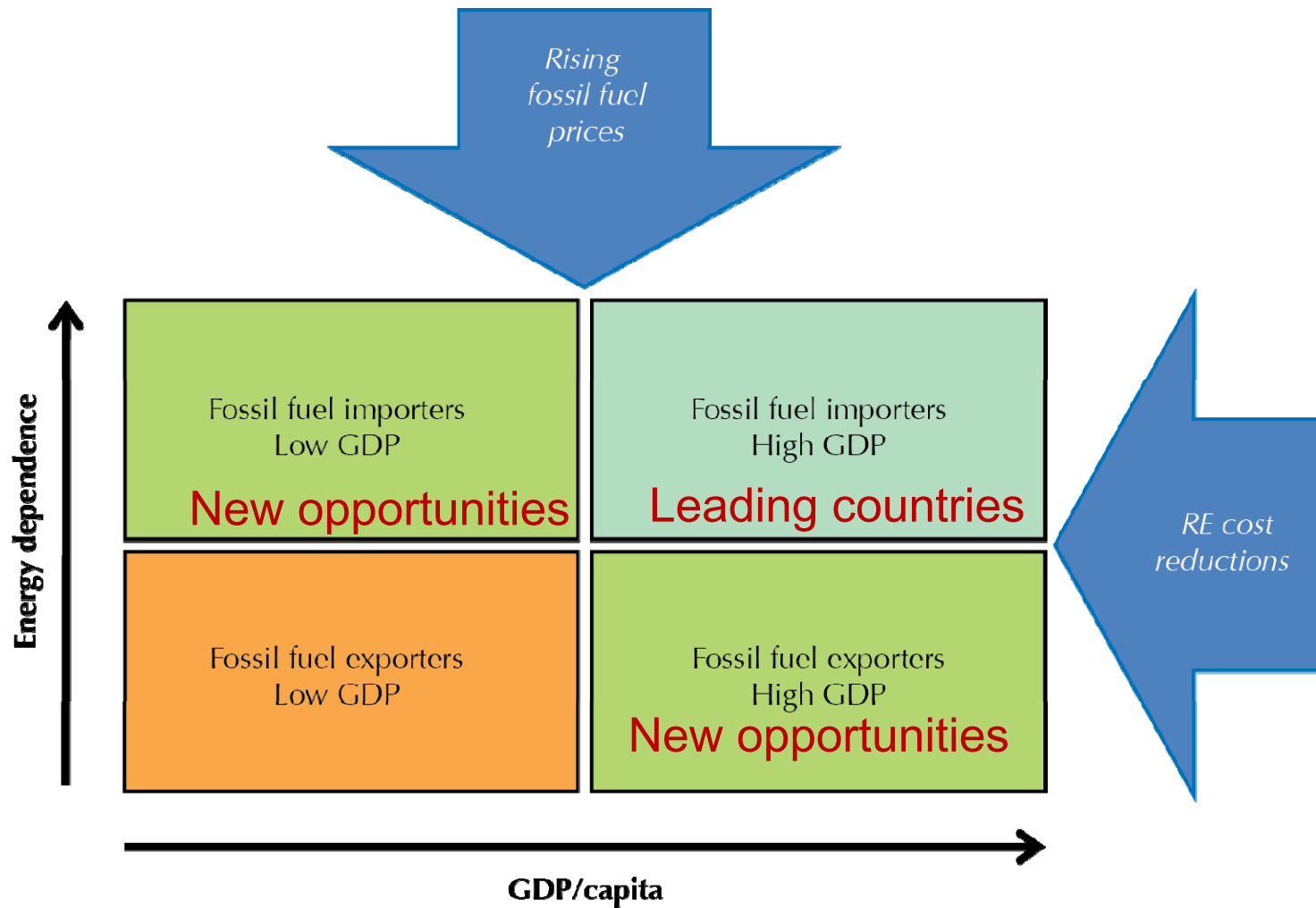
Costs are reducing

- Growing deployment has led to cost reductions in key technologies
- Hydro and some geothermal already cost-competitive
- New technologies such as wind onshore and biomass getting competitive in a broader set of circumstances
- PV still expensive but 19% cost reduction for each capacity doubling; retail price parity on leading markets



- Many more countries putting policies in place, particularly outside OECD than in 2005.
- 45 of the 56 focus countries now have RE Electricity targets, including 20 non-OECD members.
- 53 of the 56 focus countries have electricity support policies in place, compared to 35 in 2005.

Growing market expansion opportunities for RES



Source: Mueller, IEA, 2012

- Electricity demand growth and generation replacement needs
- Abundant and complementary RES resources (majority being weather-dependent)
- Recent (positive) experience with encouraging RES-E investments
- Alternative vision to being the EU Southern Corridor for gas (Romania, Bulgaria...)

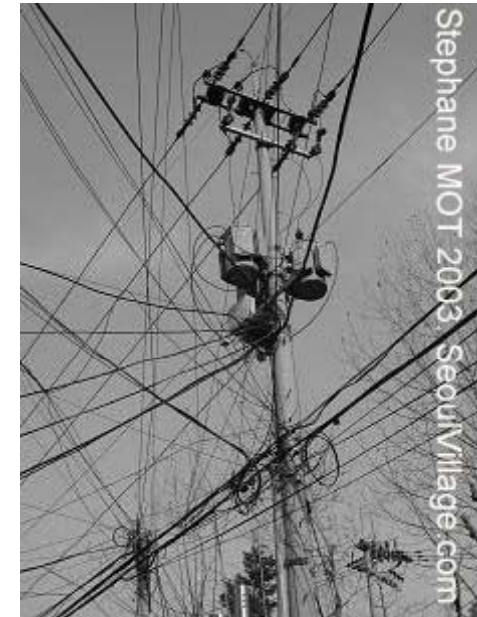
EU Danube Region Strategy could provide sufficient political framework for cooperation

- Political:
 - support only up to EU obligations...or threat of over-subsidization;
 - end customer price sensitivity;
 - RES-E: ‚western‘ technology import vs local growth
 - competition with nuclear developments
 - unfriendly, often state owned local incumbent generators
- Financial:
 - OECD returns and emerging market risks for investments
 - limited government subsidies (austerity all around)
 - stricter bank and project finance opportunities
 - hope: pension and sovereign funds, middle class savings (PV)?

1. Asymmetric incentives for RES-E generation versus network to be balanced

- RES-E generation: fast; attractive; simple incentives
- Network upgrade: slow; complicated; counter-incentives
- Queue management
- Integrated resource and network planning

Sufficient incentives for transmission and distribution upgrade is key



2. Regional electricity market building process can boost RES-E

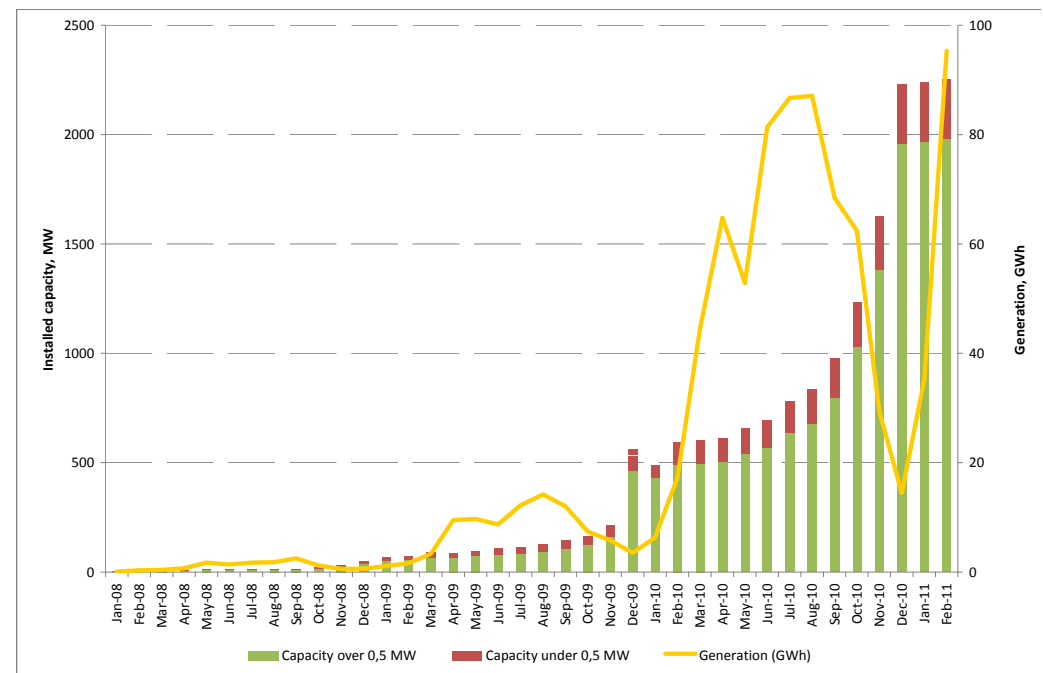
- Better pooling of weather-dependent electricity generation
- Coordinated utilization of reserve and storage capacities
- Better utilization of complementary RES resources
- Harmonized green certification across the region could help to boost cross border trading in RES-E – would be good news for investment

3. RES-E development should benefit the local economy

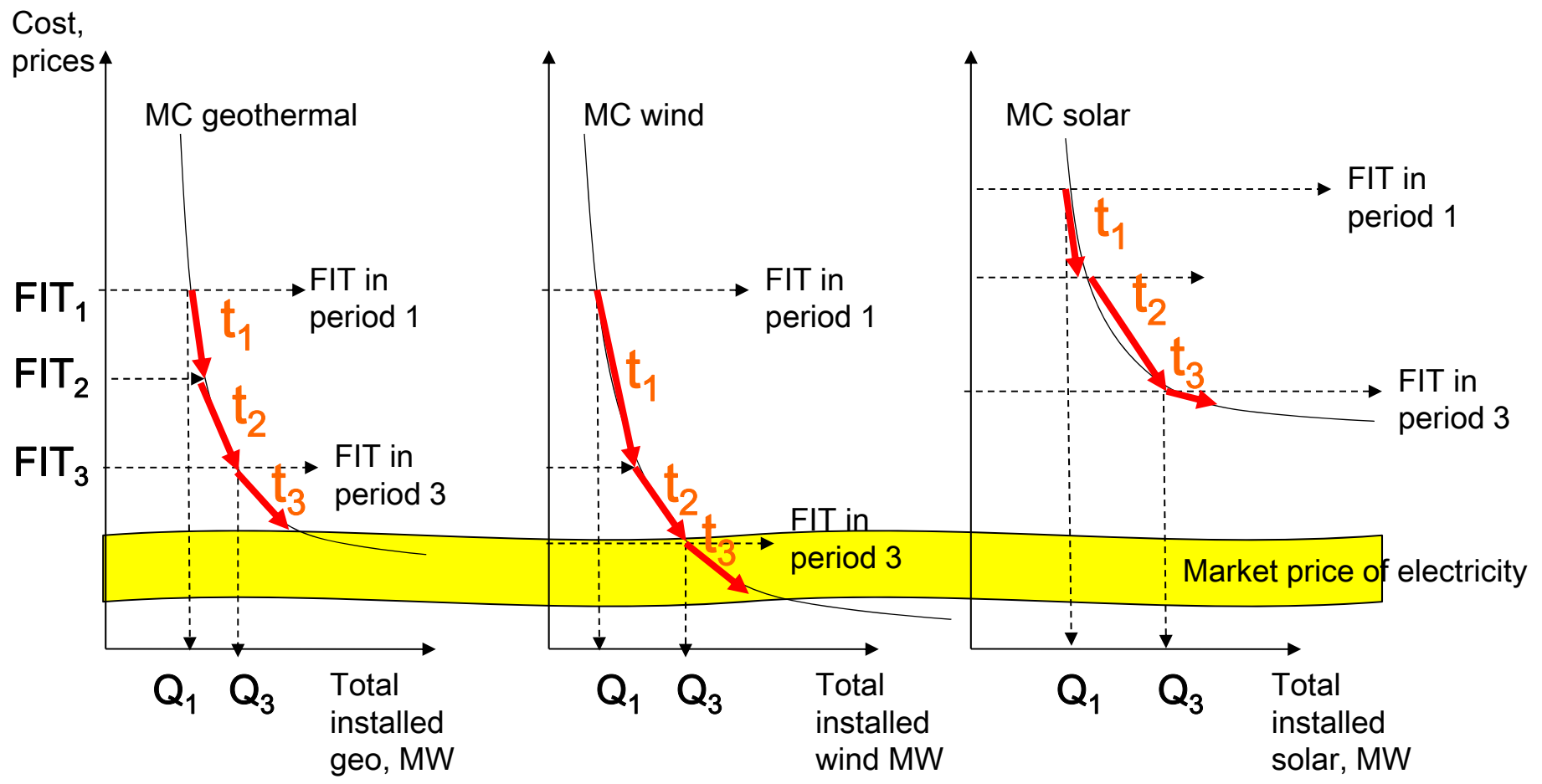
- Multiple benefits from RES-E development:
 - promoting local industry
 - improving energy supply security
 - combating climate change
- Measures to make support conditional on a pre-defined share of 'domestic' manufacturing input for RES-E projects are spreading (e.g. Ukraine, Turkey)
- Care has to be taken that such regulatory measures do not become counter productive

4. Poor RES-E support design might create undesirable investment cycles

- Stress on support budget
- Excess demand for grid connection licenses
- Might prompt an unplanned change of regulation that undermines credibility

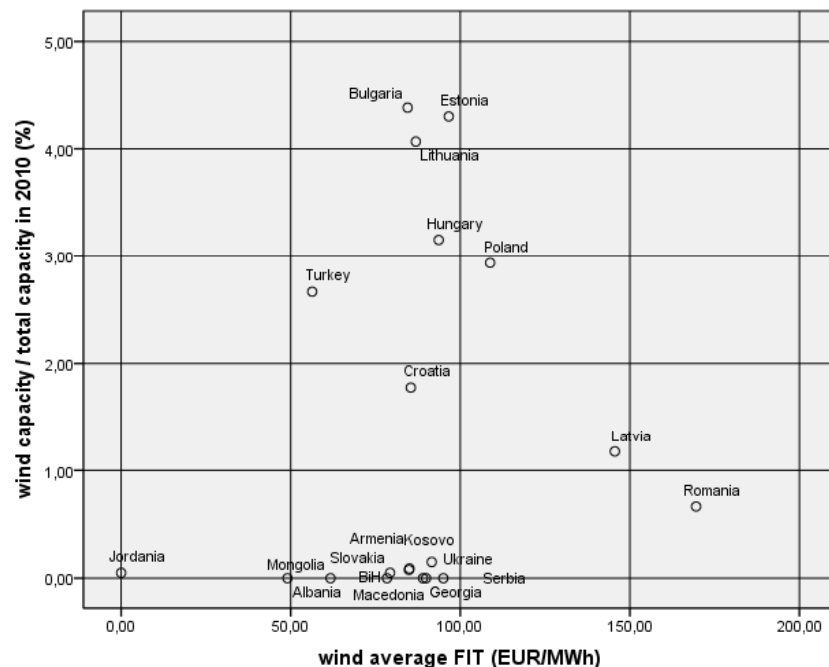


Smart design is needed: learning curves and adjustment of feed-in tariffs (FIT)

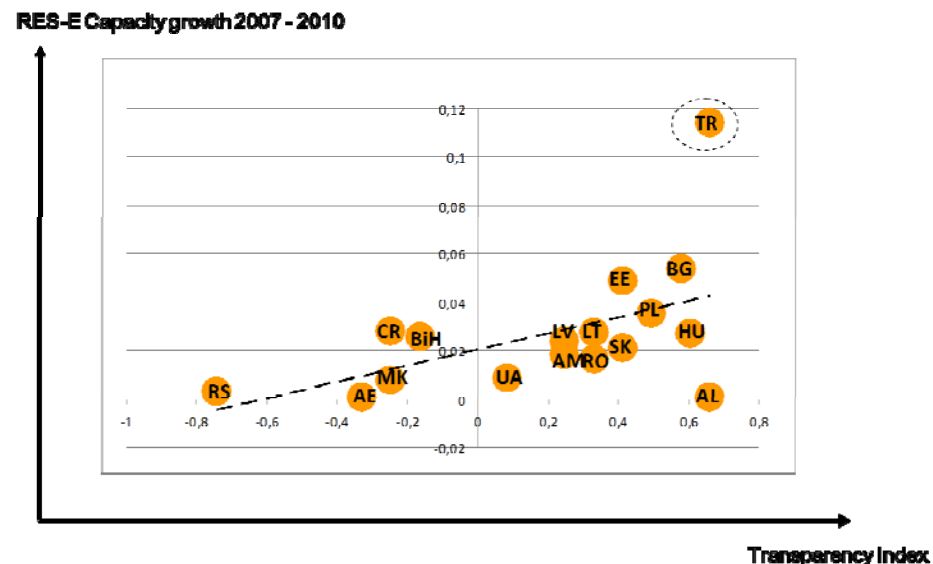


5. Nominal RES-E support vs regulatory transparency

Nominal support level and the share of wind in installed generation capacity, 2010, ERA



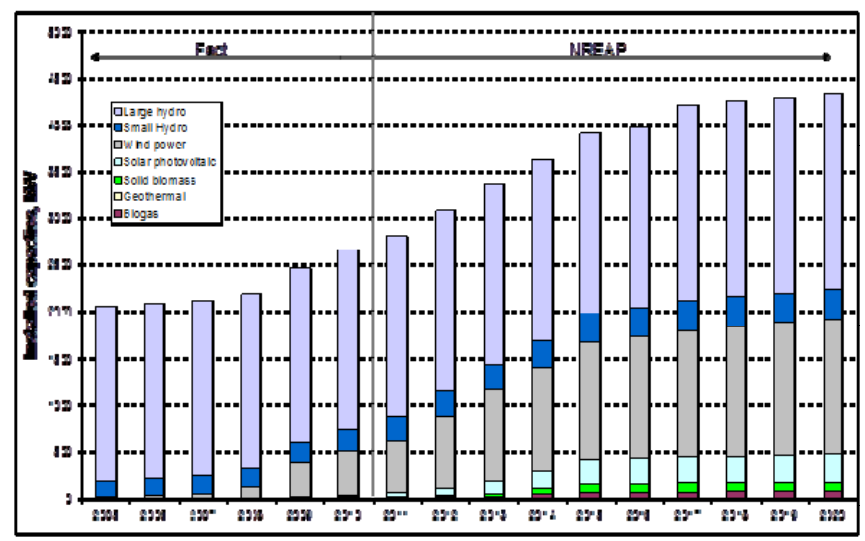
Regulatory transparency and RES-E capacity growth, 2007-2010, ERA



Excessive nominal feed-in-tariff levels do not compensate for the investment risk stemming from non-transparent regulation

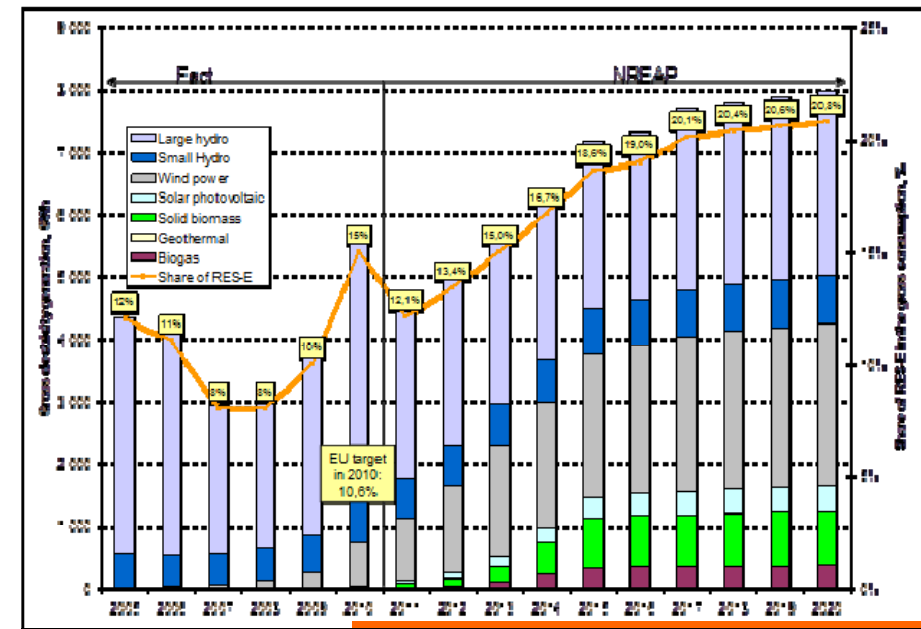
Bulgaria – RES-E outlook

Installed RES-E capacities, 2005-2020, MW



Share of weather dependent in the growth of RES-E between 2010-2020 is 64%. Rest is biomass and biogas.

RES-E gross electricity generation 2005-2020, GWh



- The lack of political will (in the short run)
 - policy aim is to limit investment to fulfil only the mandatory EU target
- Lack of capacity on the transmission grid
 - most relevant for the wind projects in the wind-rich North-East part of the country
 - missing queue management regime
- Environmental concerns
- Licensing: high number of permits is required and numerous administrative bodies are to be contacted

- RES-E targets could be reviewed in light of interest in investment and increased competitiveness in wind
- Fair distribution of network development costs between investors and grid companies could speed up network upgrades
- Increased transparency of the quota allocation for RES-E network connections could improve investor confidence
- Secondary regulations for optional FIT for installations under 1MW should be developed as soon as possible

- See for more details in three recent studies by REKK

,Principles of Regulation to promote the development of Renewable Energy Sources (RES)', the Black Sea Regional Regulatory Initiative, with NARUC

,Support Schemes for Electricity Produced from Renewable Energy Sources' with ERRA

,Clean Energy Finance Solutions: Central & Eastern Europe', with Cambridge Programme for Sustainability Leadership

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