

**BRINGING EUROPE AND THIRD COUNTRIES CLOSER  
TOGETHER THROUGH RENEWABLE ENERGIES**



## **WP4: West Balkan Case Study**

***Andreas Tuerk, Daniel Steiner, JR  
Robert Pasiscko, UNDP***

*Athens, 20 September 2013*



Co-funded by the Intelligent Energy Europe  
Programme of the European Union



## Work done so far



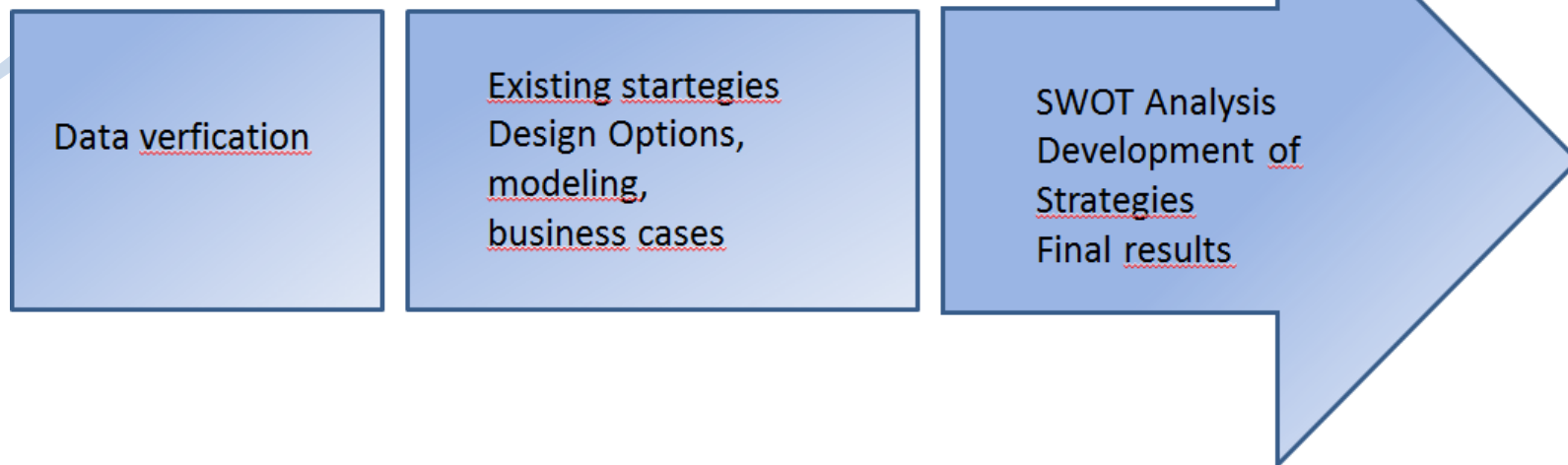
- Data collection on the West Balkan Energy System (RES potentials, energy demand scenarios, grid situation...)
- Bilateral meetings in Serbia and Bosnia (governments, project developers, investors, NGOs)
- Stakeholder exchanges also in the other WB countries
- First elaboration on strategic considerations and business models that include cooperation mechanisms



# Stakeholder dialogue



## Stakeholder involvement



April    May    June    July    Aug.    Sept.    Oct.    Nov.    Dec.    Jan.    Feb.    Mar.

2013

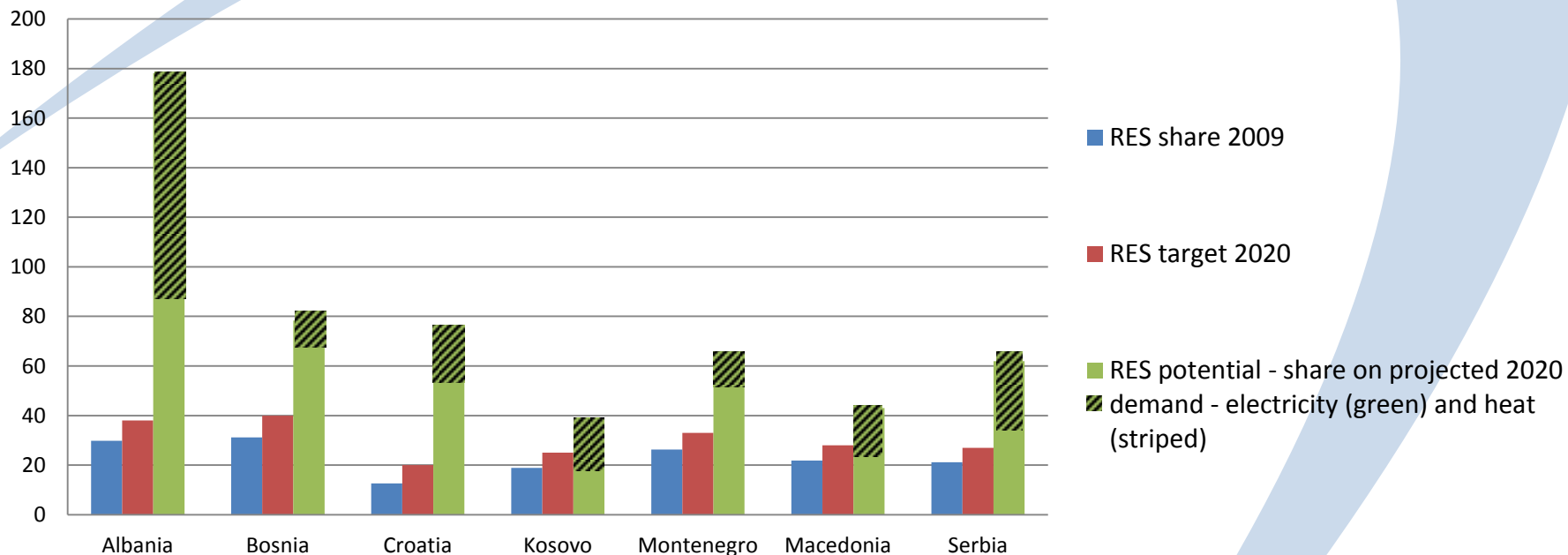
2014



# Large surplus potential in some of the WB countries



## Actual, targeted and potential RES shares (%)

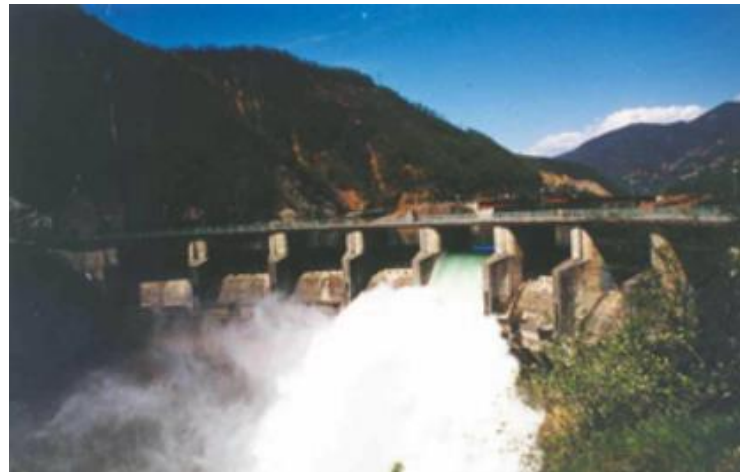


# Cheap hydro potentials available



## Hydro: 1-3 Million Euro/MW

- Cheap labor force
- Profitable sites available
- Less environmental requirements



# Adoption of RES directive and RES targets in the West Balkan countries



| Energy Community RES 2020 Targets |                        |                                |
|-----------------------------------|------------------------|--------------------------------|
| Contracting Party                 | Share of RES in 2009 * | Target share of RES in 2020 ** |
| Albania                           | 31.2 %                 | 38 %                           |
| Bosnia and Herzegovina            | 34 %                   | 40 %                           |
| Croatia                           | 12.6 %                 | 20 %                           |
| FYR of Macedonia                  | 21.9 %                 | 28 %                           |
| Moldova                           | 11.9 %                 | 17 %                           |
| Montenegro                        | 26.3 %                 | 33 %                           |
| Serbia                            | 21.2 %                 | 27 %                           |
| Ukraine                           | 5.5 %                  | 11 %                           |
| Kosovo*                           | 18.9 %                 | 25 %                           |



# Adoption of RES directive and RES targets in the West Balkan countries



- The countries covered by the West Balkan case study will be eligible to make use of
  - ✓ Statistical transfers
  - ✓ Joint support schemes
  - ✓ Joint projects between EU Member States and third countries requiring the physical transfer of the involved electricity.



# Significant barriers for RES deployment (1)



- Institutional weaknesses
- Legal uncertainty
- Regulatory (electricity price setting, monopolistic structures)
  - Low purchase prices are not attractive for foreign investors, in present situation mostly existing utilities are interested to invest in RES
  - Existing utilities invest in hydro





## Significant barriers for RES deployment (2)



- Uncertainty regarding feed-in tariffs...
- Budgetary caps for feed-ins
- Administrative complexity
- Difficulties to get financing (EBRD, WB finance needed)



# Bosnian feed-in tariffs



| Plant Type    | EP BIH<br>€/MWh | EP HZHB<br>€/MWh | ERS<br>€/MWh |
|---------------|-----------------|------------------|--------------|
| Small hydro   | 46,8            | 51,0             | 34,9         |
| Biogas, waste | 45,1            | 49,1             | 33,6         |
| Wind          | 58,4            | 63,7             | 43,7         |
| Solar         | 58,4            | 63,7             | 43,7         |

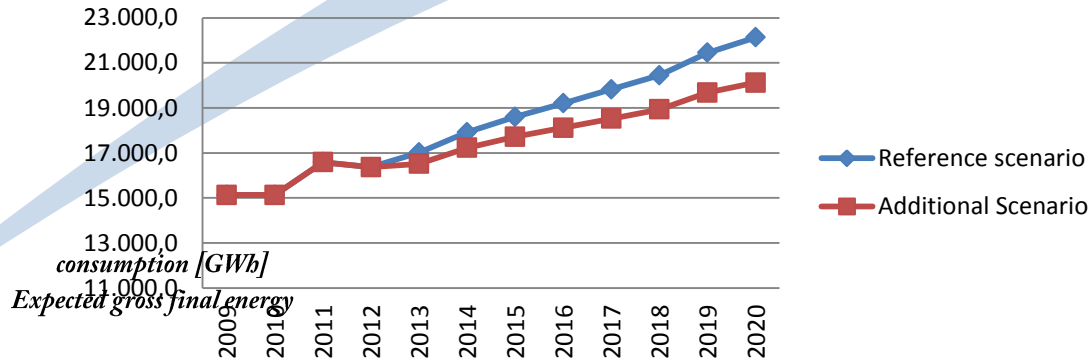
➤ **Not even one wind plant!**



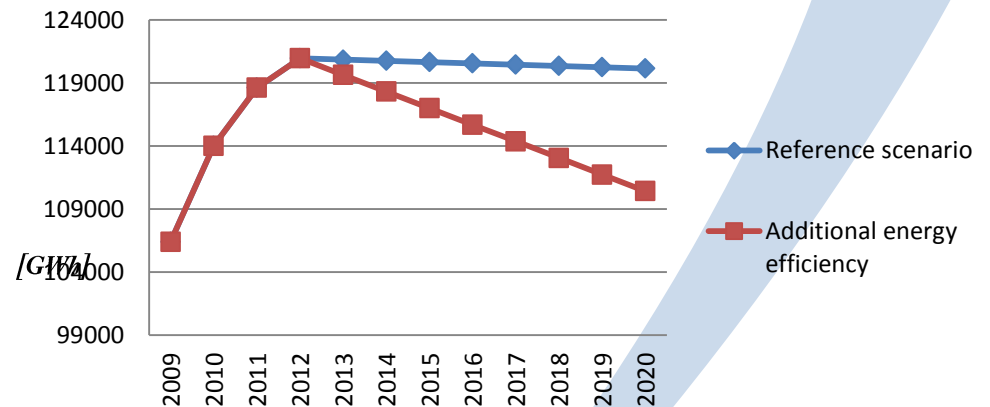
# Rising Energy Demand?



## Gross final consumption of energy - Kosovo forecast document



## Gross final consumption of energy in Serbia



## Cooperation within the region?



- Current lack of cooperation between countries leads to an inefficient regional energy system as opposed pre-1990, where region was a net electricity exporter
- Cooperation between some countries in the region unlikely (eg Serbia and Kosovo), in others cooperation is emerging (Albania and Kosovo, or Macedonia and Kosovo)
- Joint Support schemes however unlikely in the near future



# Use of statistical transfer?



- Statistical transfer would have to be approved by the Ministerial Council of the Energy Community
    - Energy statistics and indicative trajectory has to be met.
    - Lack of robust energy statistics a major barrier in the region
- > statistical transfer unlikely in the short term



# Several WB countries plan to use cooperation mechanisms



- Initial plans to make use of Joint Projects in Albania, Serbia and Bosnia
  - Albania: interested in Joint Projects: 1500 MW of wind is proposed to be used for Joint Projects
  - Serbia: besides hydro also solar is proposed for Joint Projects



# The role of cooperation mechanisms



- Cooperation mechanisms may offer new business cases to the region
- Low feed-in tariffs are no barrier for some technologies and locations (hydro), for others additional funding may be needed
- Of high relevance for new business cases is the planned undersea cable between Italy and Montenegro



# New business opportunities for the West Balkan?

16





# Plans to strongly expand fossils



# Coal as main future energy source



- Some of the WB countries have cheap coal resources, eg Bosnia or Kosovo

| PRIMES 2010 | 10€/MWh |
|-------------|---------|
| Serbia      | 5,2/MWh |
| Kosovo      | 4,3/MWh |
| Bosnia      | 5-6/MWh |

- Coal has a high acceptance as it creates and secures jobs



# Timeframe to use cooperation mechanisms



- Some countries plan to significantly expand fossil capacities
  - will need to importantly expand own RES potentials to meet future RES targets
  - Depending on the country this may strongly reduce the long-term potential for cooperation mechanism
- Cooperation mechanism however an interim option, that help to earlier expand RES potential. Possible win-win constellation for sellers and buyers



# Strategic considerations and business models



- How can countries assess their potential for coopmex in a structured way? (Decision support tool)
- Which types of coopmex might be most likely (if any)?
- What has to be considered when designing business models for coopmex?



# Joint Projects between Italy and Serbia – practical example



- MoU between Italy and Serbia on Joint Projects
- MoU covers 10 potential hydro plants in Serbia
- Transfer of electricity and Italian feed-in of 155 €/MWh for 15 years
- Helps Italy to meet its 2020 targets
- Requires the construction of an undersea cable to Italy



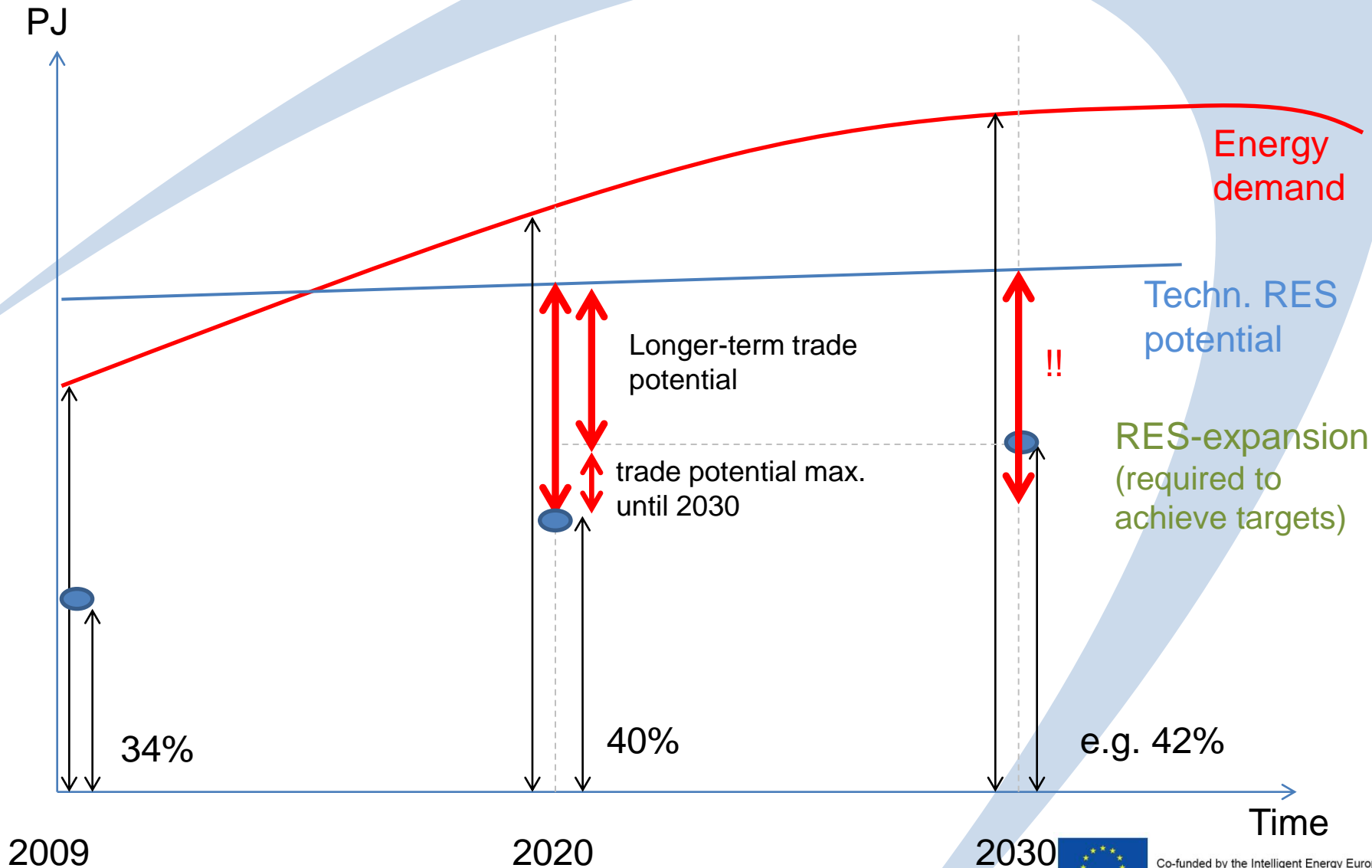
# Joint Projects between Italy and Serbia – practical example



- Pilot Project on the Ibar river
- Joint venture SECI and EPS called Ibarske Hidroelektrane
- After 15 years electricity is sold in Serbia for local market prices
- After 20 years plants are completely owned by EPS (end of concession period)
- → finally, FiT were not approved by the Italian Parliament



# Estimating a country's potential for RES-trade



# Steps in determining conditions for business models (1)



- Key question: **How should a country decide on the period for physical export of electricity, on the share of electricity export and on the concession period?**
  - 1.) Investors require a certain **rate of return** for their investments and
  - 2.) certain **amortisation periods**
- ➔ gives insights about how many revenues have to be earned within a certain period





# Steps in determining conditions for business models (2)



- Based on an investor's demands and FiT/market prices an investor could generate from exporting electricity...  
... the **exporting period** of „RES-share connected electricity“ is partly determined.
- Maximum exporting period of „RES-share connected electricity“ is also determined by a host country's need of RES-shares for achieving its RES-target
- Which types of electricity (peak, base load) WB countries can use for coopmex?



# Steps in determining conditions for business models (3)



- Exporting period can be varied by the **share of export** (not entire electricity output of a respective plant need to be transferred to abroad together with RES-shares), if a country is not willing to forgo the entire electricity (generated by a certain project) for a certain period
- Share of export is also determined by interim targets, i.e. it is an „adjustement tool“ to adjust the exporting period for considering also interim targets.



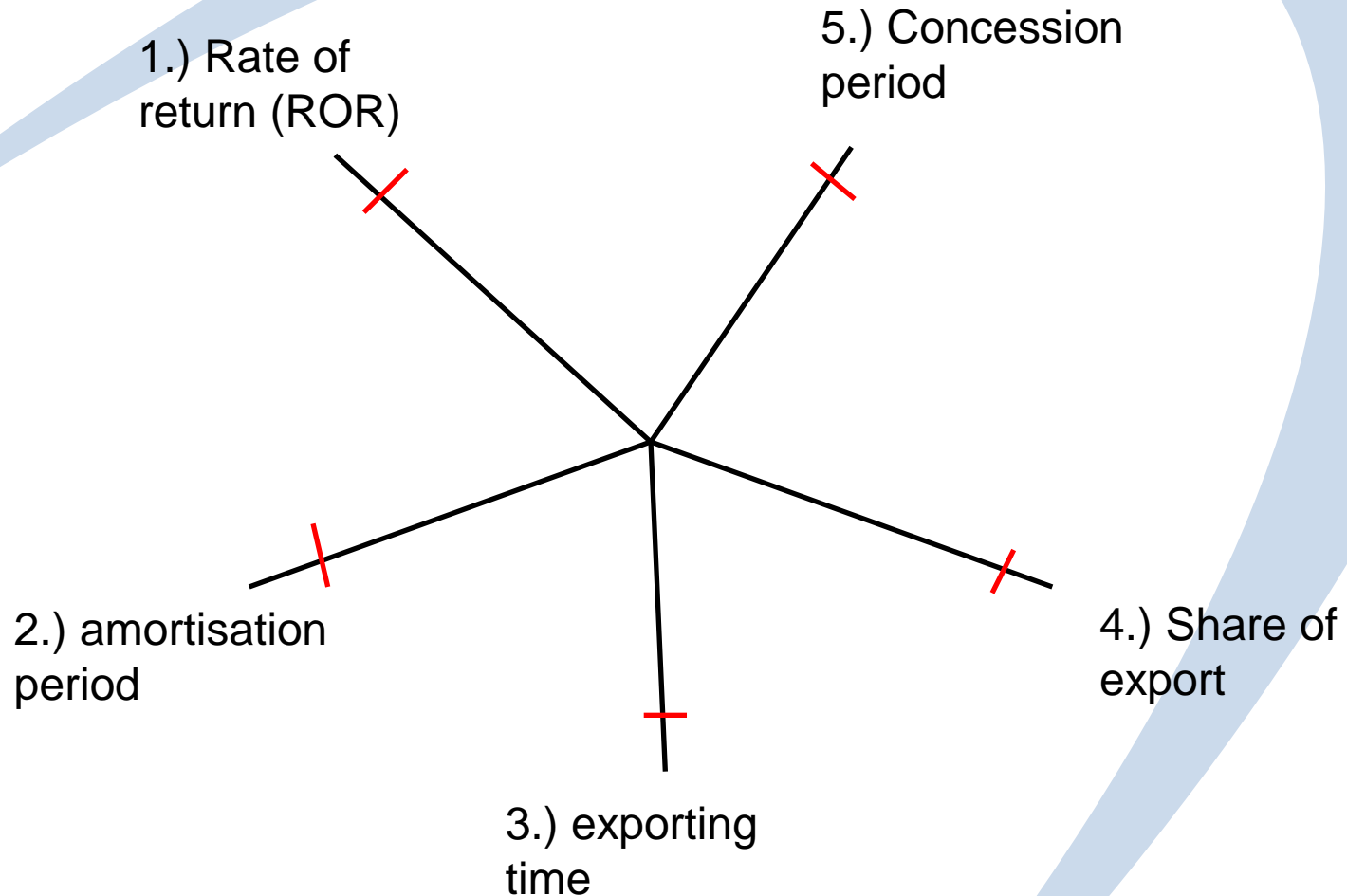
# Steps in determining conditions for business models (3)



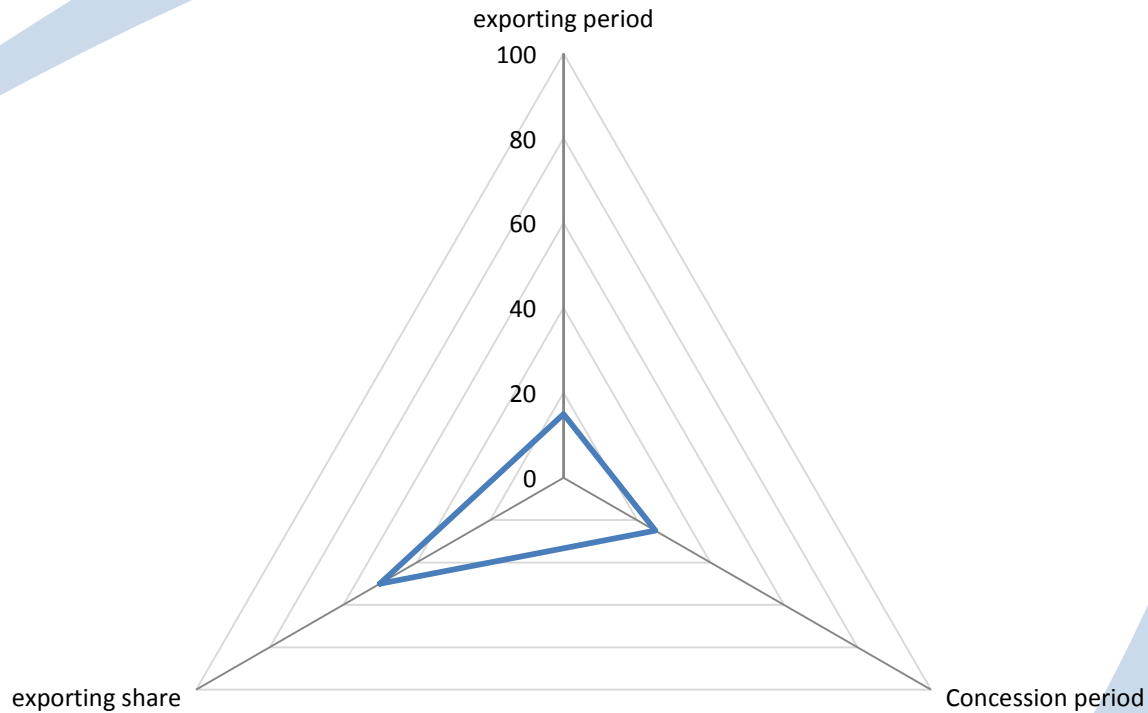
- **Concession period** is another „adjustment tool“ to allow investor getting sufficient return on investment even if it is not possible to allow RES-share export for a sufficient time (e.g. because of RES-targets of host country)
- Investor can earn money by also selling electricity to the host country's market
- Revenues from Coopmex + rev. from local market prices



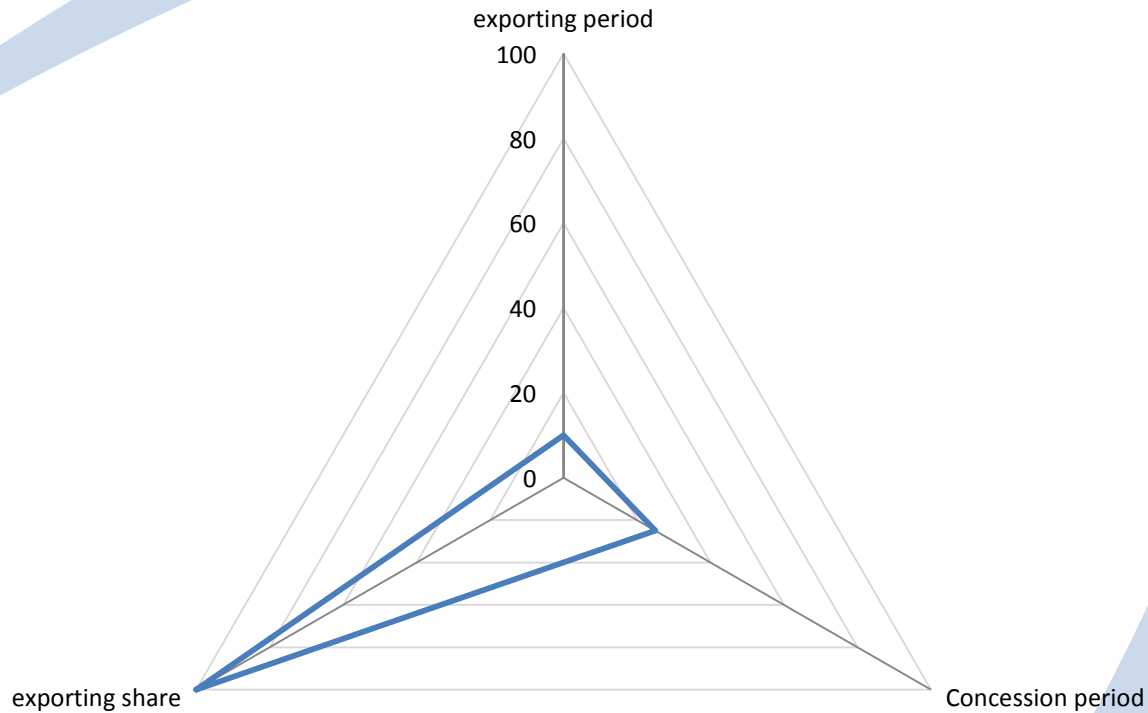
# Crucial factors determining the business models (graphic depiction)



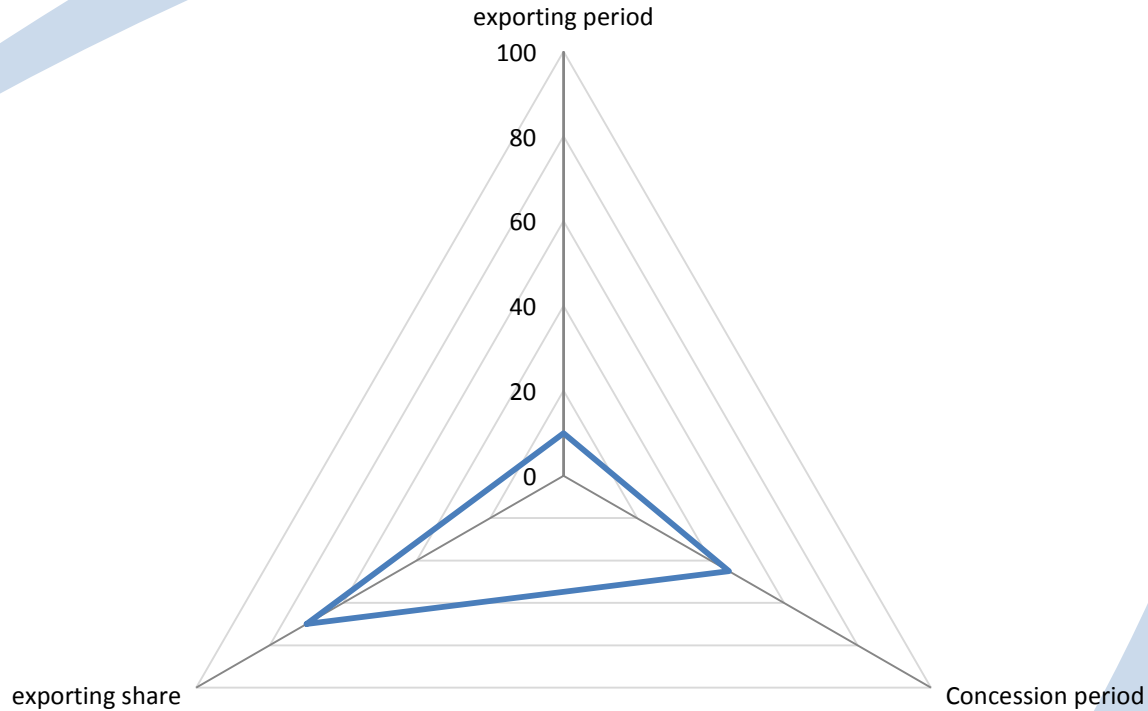
# Crucial factors determining the business models (graphic depiction)



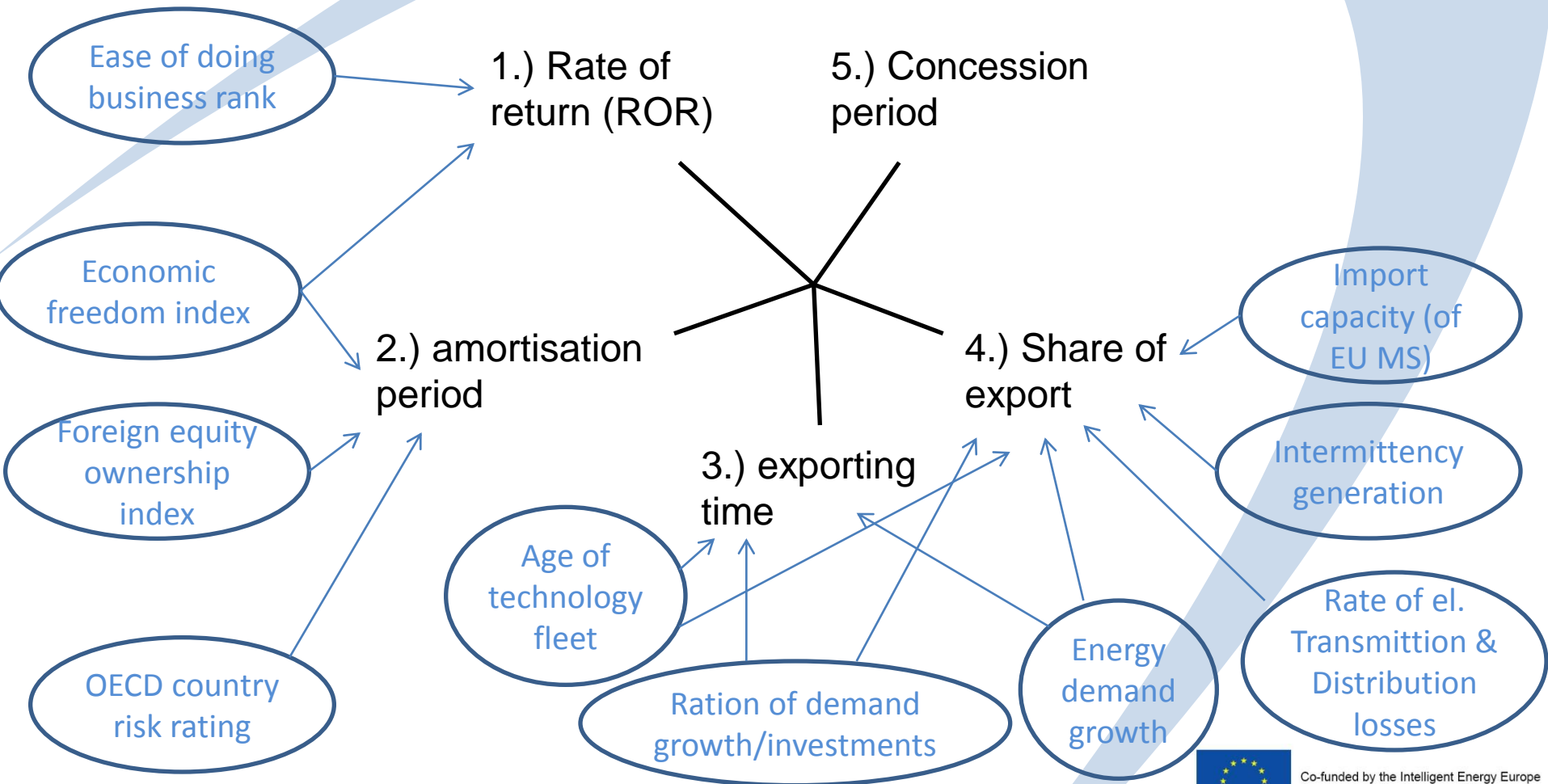
# Crucial factors determining the business models (graphic depiction)



# Crucial factors determining the business models (graphic depiction)



# Crucial factors determining the business models – connex to D 2.5





# Our agenda (1)



## Strategic consideration for each WB country:

- ✓ Domestic target achievement vs trade: Do the Balkans need the potential for 2020 or later?
- ✓ Trading with the EU or within the region?
- ✓ Can the cooperation mechanisms lead to new business models for the region and how could they look like?
- ✓ Could the cooperation mechanisms assist in avoiding a fossil lock-in?
- ✓ Possible role and design of different cooperation mechanism with different pros and cons
- **Development of an analytical template**



## Our agenda (2)



- Continuation of bilateral meetings and stakeholder dialogues!
- Approaching the governments: Most of the NREAPs are not finalized, possibility to shape the chapters on cooperation mechanism
  - Croatia: Meeting with the government took place
  - BIH: Government invited us for a meeting
  - Albania: UNDP Albania link to Albanian gvt
  - Montenegro: Meeting with government planned, contact established



## Our agenda (3)



- Synergies with other project in the region (OPERA Model)
- Common meeting with other modeling projects?
- Expanding the Science Advisory Board





**Thanks for your attention!**



Co-funded by the Intelligent Energy Europe  
Programme of the European Union