



Peti
ENERGETSKI SAMIT
u Bosni i Hercegovini



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POD POKROVITELJSTVOM



Ministarstvo vanjske trgovine
i ekonomskih odnosa BiH



Državna regulatorna komisija
za električnu energiju (DERK)



Regulatorna komisija za energetiku
Republike Srpske (RERS)



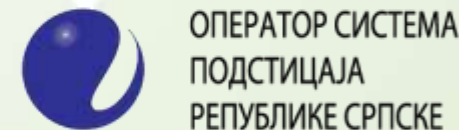
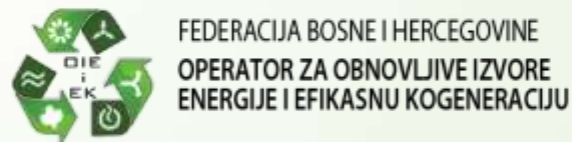
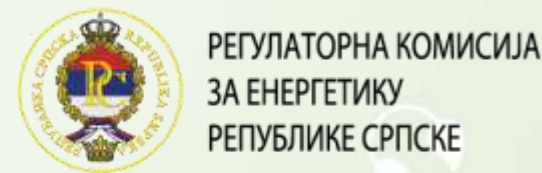
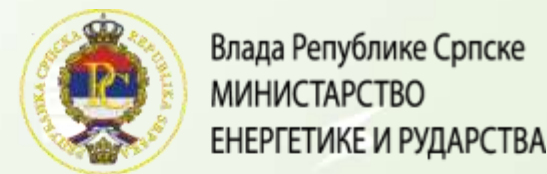
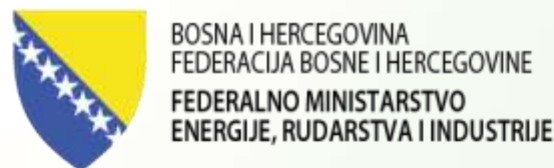
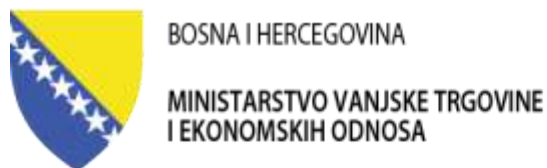
Regulatorna komisija za energiju
u Federaciji BiH (FERK)

Reform of the Renewable Energy Support Scheme System in Bosnia and Herzegovina

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Working Group Members for the Reform of the RE Support Schemes in Bosnia and Herzegovina



Motivation and Need for the Reform

- The “RE world” dramatically changed since existing support schemes were introduced
 - Tremendous development of RE generation installed capacities
 - Extraordinary technology improvement
 - Significant price drop per installed kW
 - Challenges in networks related to higher feed-in of intermittent RE
 - New EU regulation for RE reflects the recent developments
- BIH needs to continue RE support with the objective to reach point where support will not be needed in a near/mid future
- Future RE support scheme must be more cost-efficient and should be market-based / competitive

Basic Features of the New RE Support Schemes in BIH

- New RES support schemes are transparent and non-discriminatory – auctions are introduced instead of “allocation by the order of application” (first come – first serve)
- Different support schemes for small and large RES installations
- New RES support schemes provide:
 - Either more projects, i.e. MW/MWh from RES than so far, for the same spent funds,
 - Or the same amount of projects, i.e. MW/MWh from RES as so far, for less spent funds
- Significant improvements are proposed in legal/regulatory framework for consumers that produce electricity for own needs (Prosumers)
- Institution of so called community energy projects is introduced in legal-regulatory framework for RES

Approach for Change of RES Support Schemes in BIH

- Usage of positive practice of others, predominantly European countries, during creation of concept of new RES support scheme
- Selective application of experiences of other countries, respecting specificity of electricity sector in BIH
- Starting points are:
 - Existing legislation on RES, and linked to RES
 - Proposal of existing legal-regulatory framework modification and amendment
- Adaptation of the proposed model to specificities of the institutional set-up in BIH (model is developed as unique, while proposals for implementation are made and adjusted to individual entities and Brčko District)
- Modification of business processes of competent institutions for implementation of new support schemes - for all institutions, on different levels of authorities in BIH

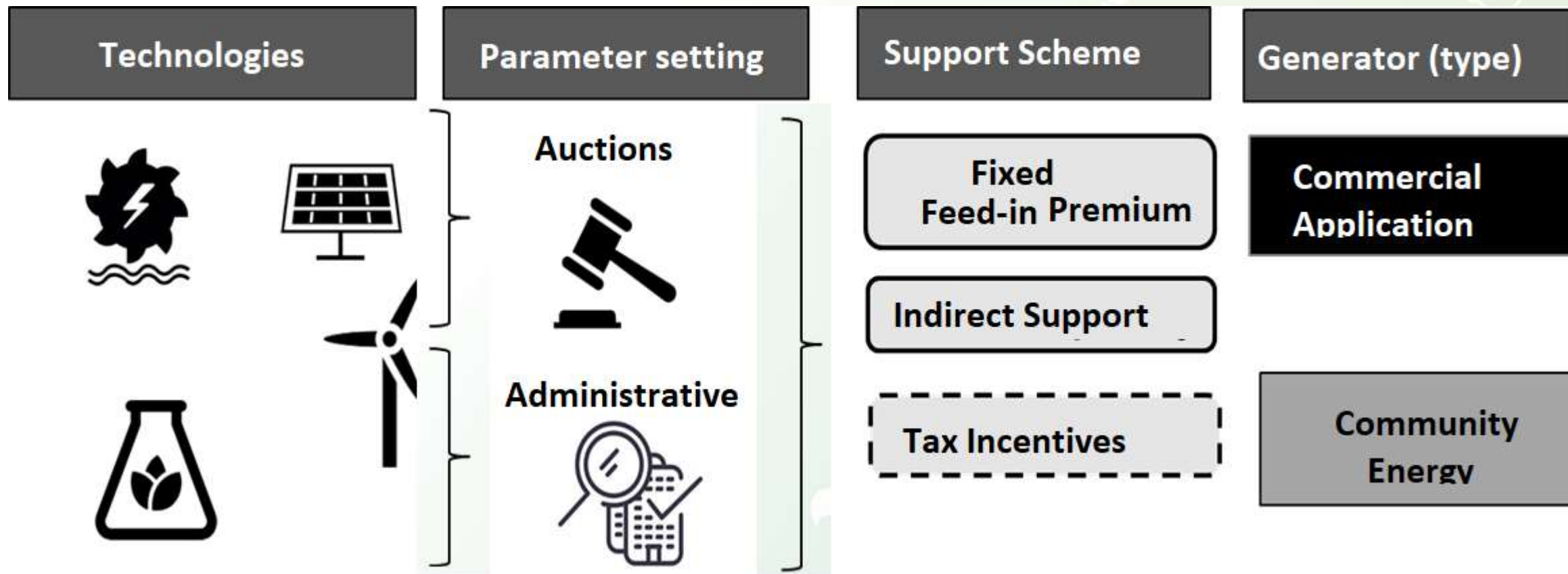
Division of RES Support

- RES support in BIH is divided by:
 - RES capacity that is supported, on:
 - Support for large installations*, and
 - Support for small installations.
 - Type of support, on:
 - Direct support (FIP, FIT and tax rebates), and
 - Indirect support (participation in balancing costs, priority dispatching, network connection costs, etc.)
 - Allocation support methods, on:
 - Auction (open or site specific auctions), and
 - Administrative (based on expert estimation)
- Proposed support schemes are combination of these variants

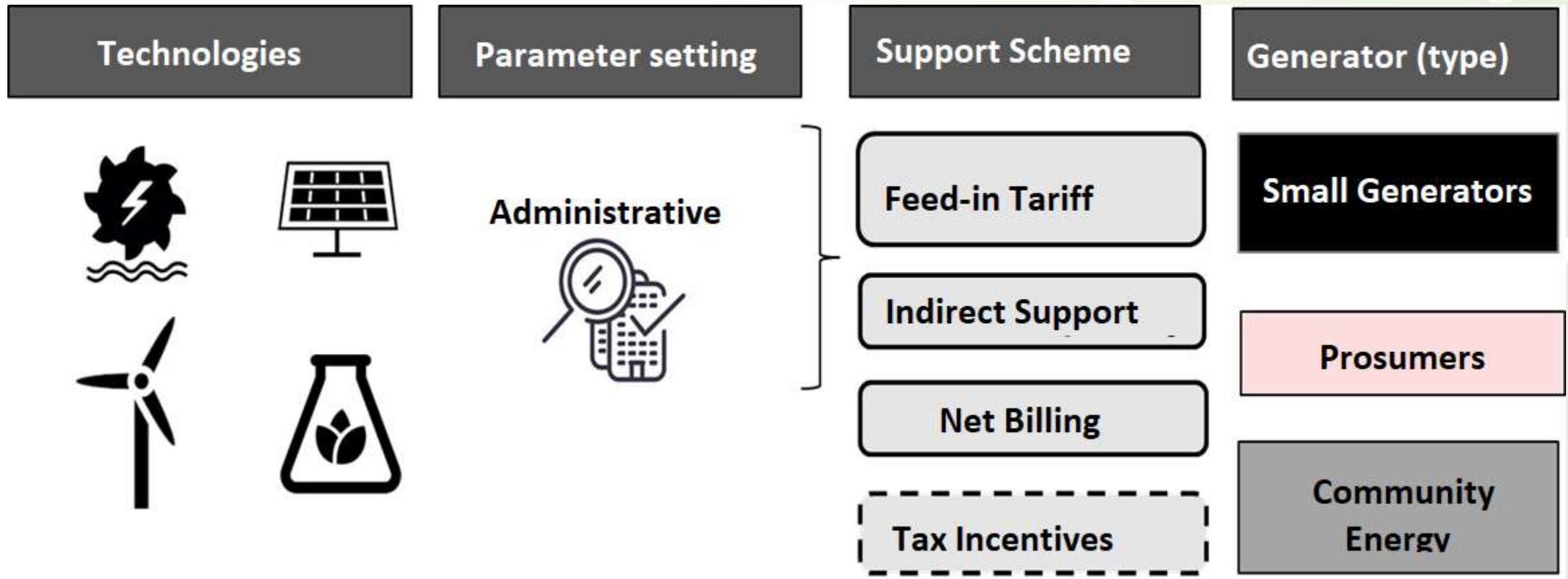
* → Threshold between large and small installations differ by RES technologies



Support for Large RES Installations



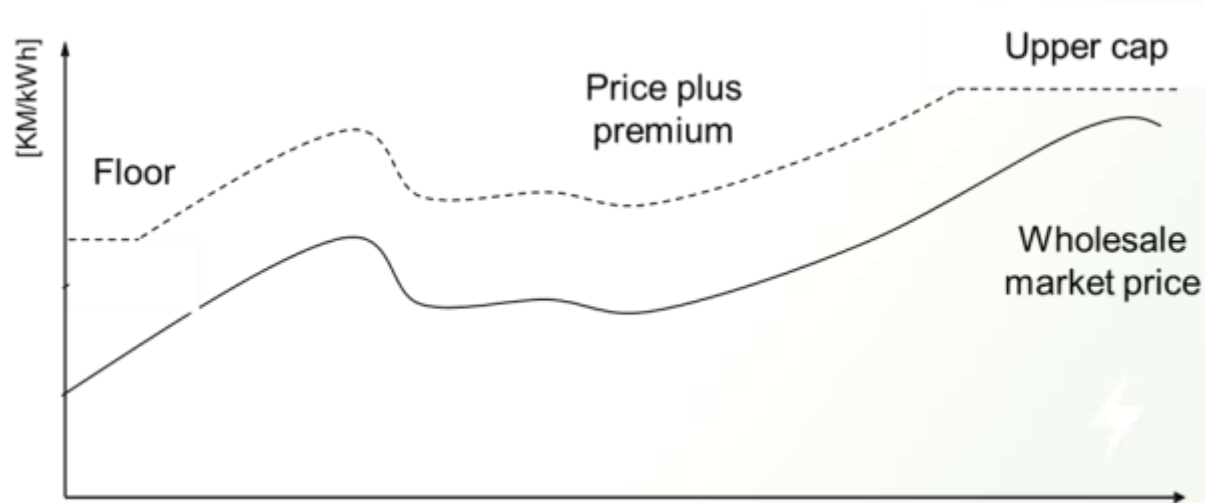
Support for Small RES Installations



Threshold between Large and Small RES Installations

- Threshold to be defined by the proposed modifications and amendments of the existing legal-regulatory RES framework
- It should be analyzed and defined separately for each technology
- Criteria for threshold definition should be:
 - techno-economic potential for certain technologies
 - technological limitations
 - commercial limitations
 - determination to support certain technologies

Fixed Premium on Actual Market Price



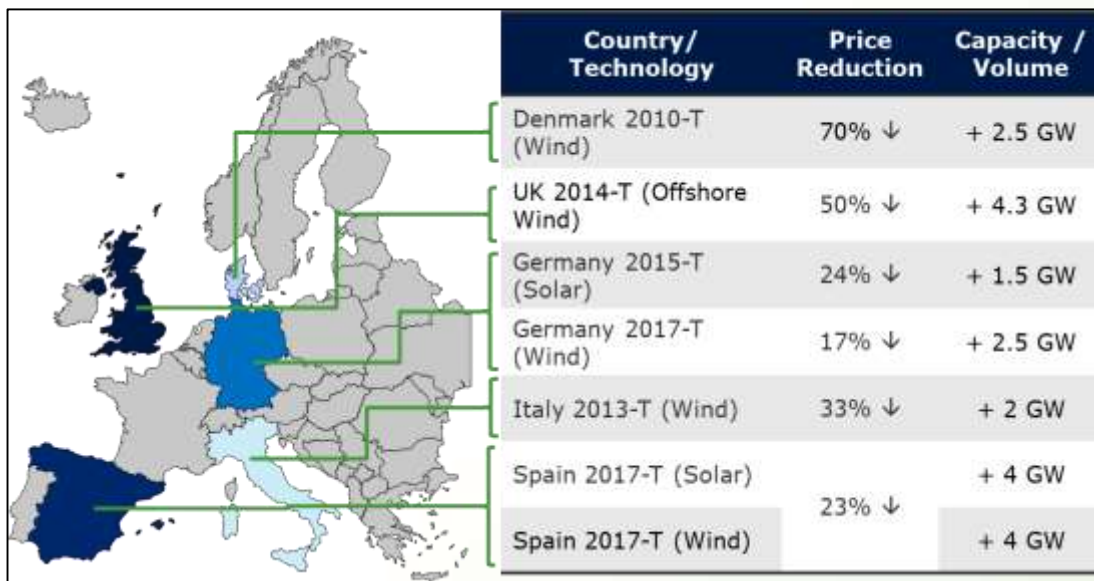
- Long-term objective of introduction of purchase premiums: support of RES markets integration
- Short term objective: greater operation efficiency

- Premium on wholesale market price (or on new reference price in transition phase)
- Limitations on upper and lower border (cap and floor)

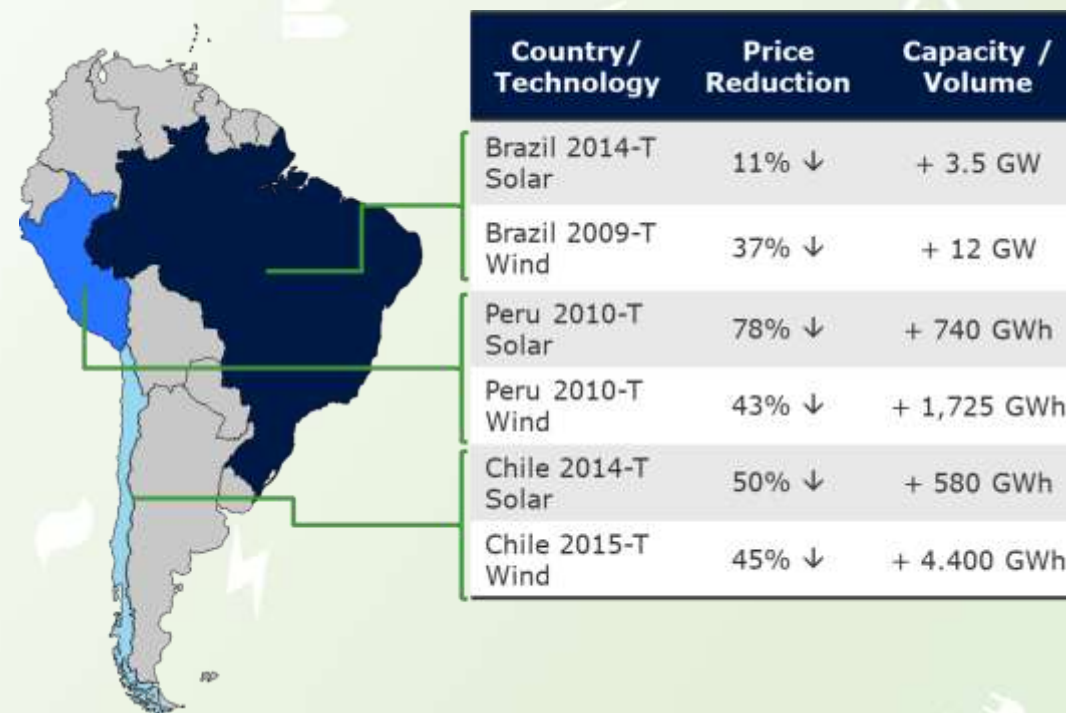
Renewable Energy Auctions Reduce Support Cost

Auction processes for renewable energy support level setting have reduced support cost worldwide

Selected empirical evidence from the EU

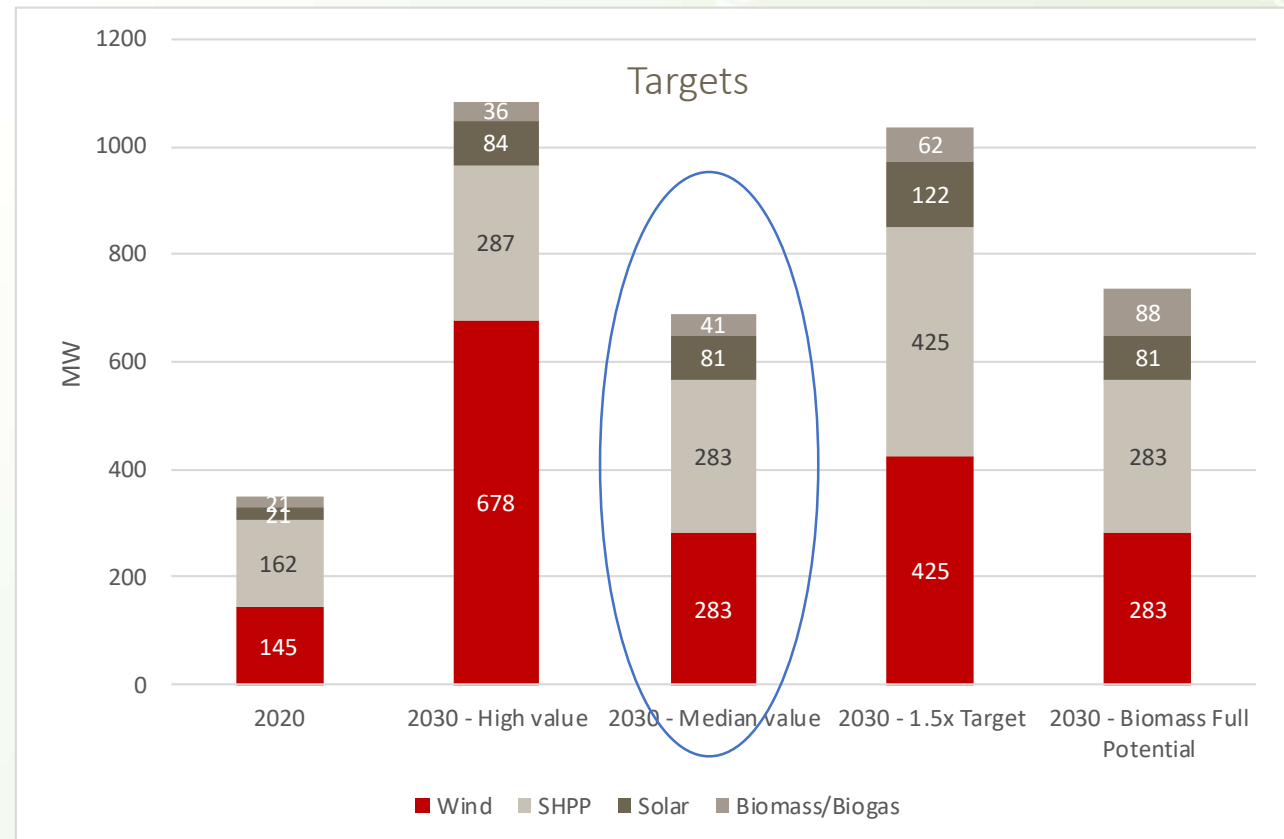


Selected empirical evidence from Latin America

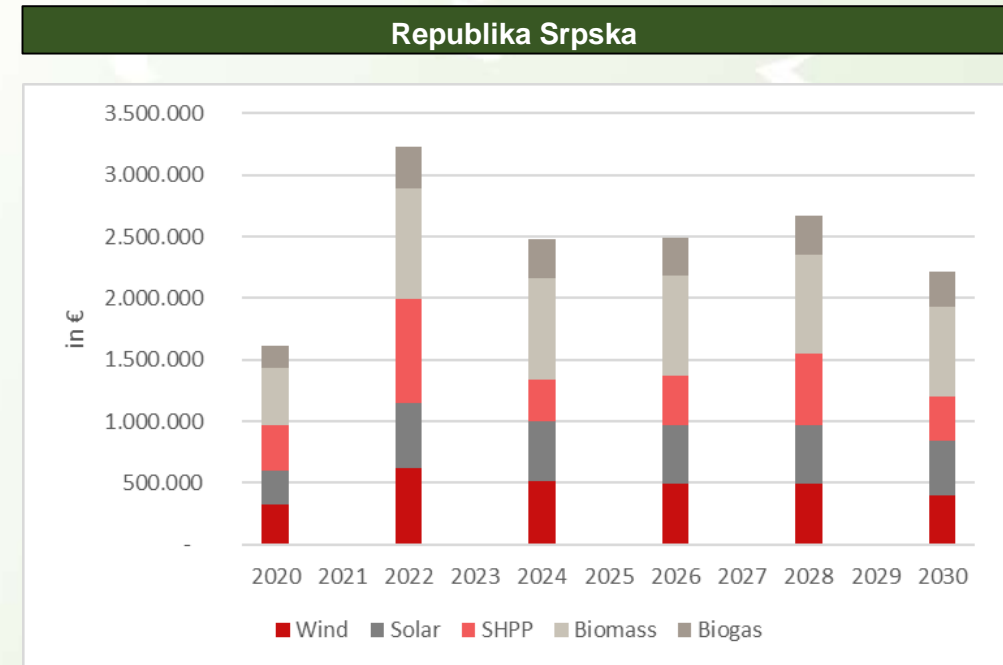
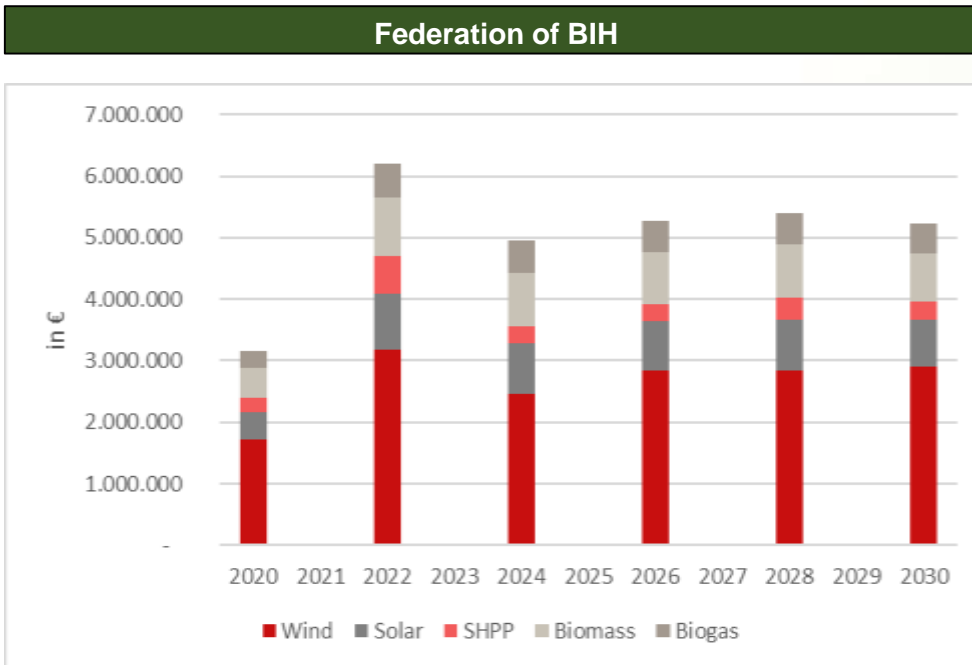


Quantitative Analysis: Targets and Assumptions

- Quantitative analysis to investigate RE support cost for BIH
- Based on assumptions from official Renewable Energy strategy & data on RE from international studies
- Price & demand development forecast based on World Bank study
- Tool provided to investigate support cost under different scenarios
- Results shown based on medium value scenario



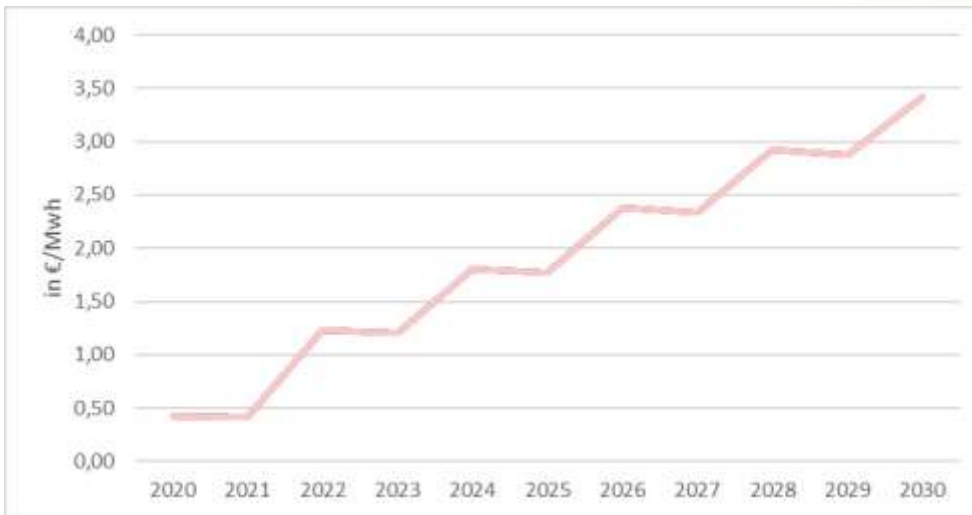
Results: Aggregate Annual Cost by Entity



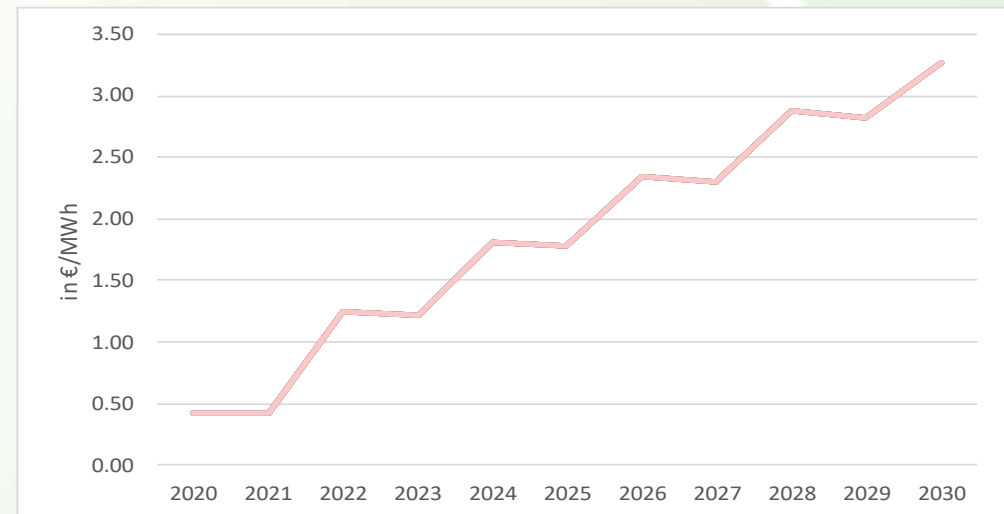
- Support Cost by technology for all new installed power plants in respective year on entity level.
- Underlying assumption: 15 yrs period of support, scheme designed to cover CAPEX & OPEX

Results: Unit Cost per Electricity Generated

Federation of BIH



Republika Srpska

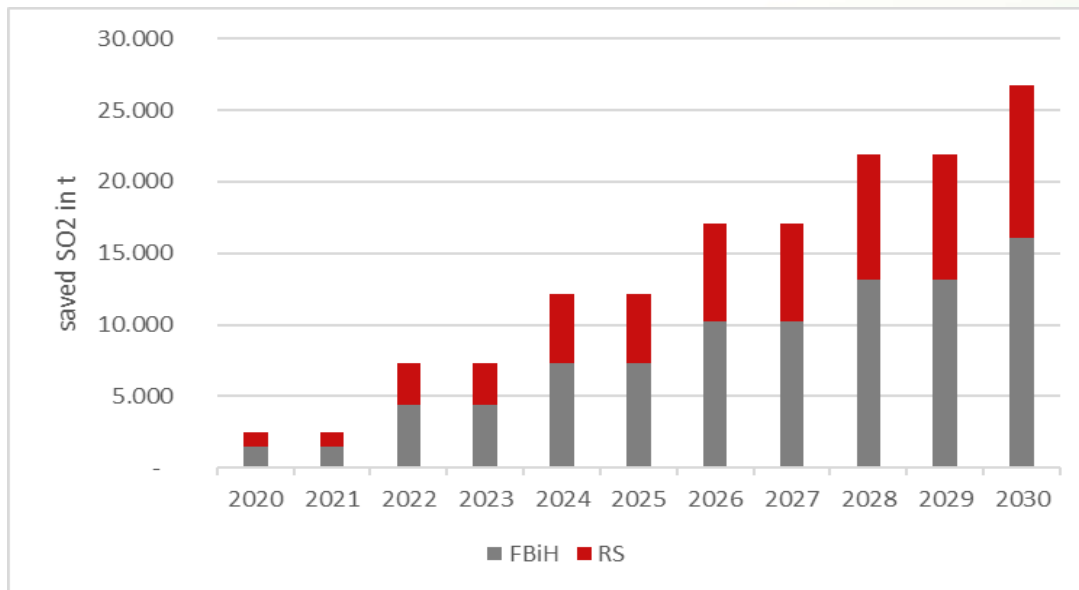


- Support Cost per MWh generated for 2020-2030 by new installations, by entity
- Basis for added value to general renewable levy (investments prior to 2020 are not included)
- Between 0,5 and 3,5 €/MWh corresponds to between 0,1 and 0,7 Pf/kWh (add-on to current RE Levy)
- current RE Levy in FBIH: 0,002555 KM/kWh current RE Levy in RS: 0,0075 KM/kWh

Results: Contribution to Climate Policy

Scenario result: Around 26.75 kt SO₂ (9% of 2016 level) and 2.3 kt NO_x (9% of 2016 level) will be saved in 2030 in total on country level emissions)

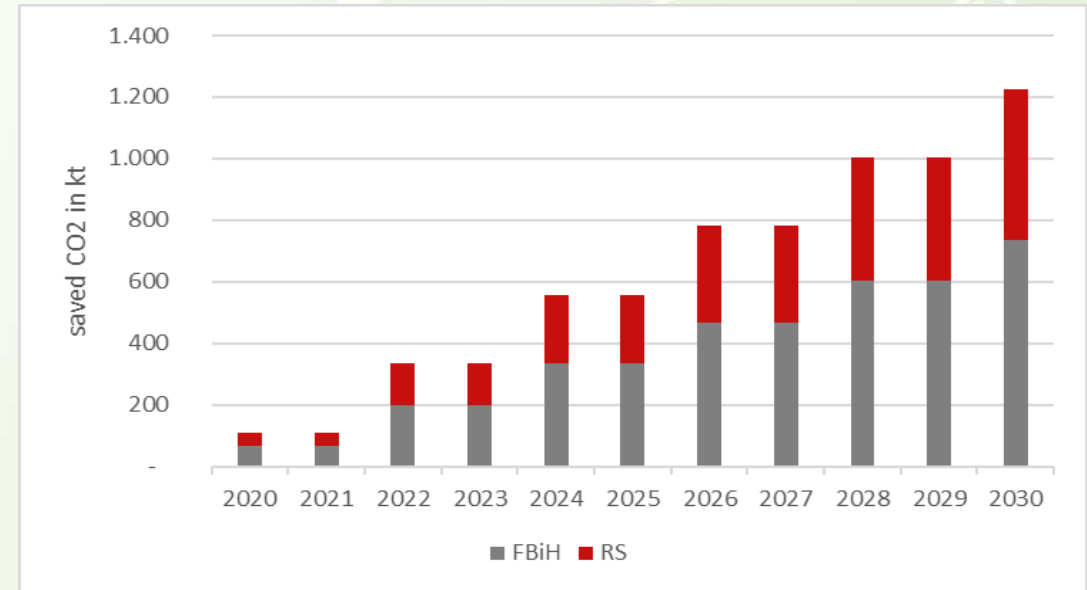
Yearly reduction of SO₂ emissions



Own calculation of SO₂ emission factors for the Bosnian generation mix based on HEAL, 2016 and IEA, 2016

Scenario result: CO₂ emissions saved through additional RE electricity generation amounts to round 1,227 kt in 2030 in total on country level (9% of 2010 emissions)

Yearly reduction of CO₂ emissions

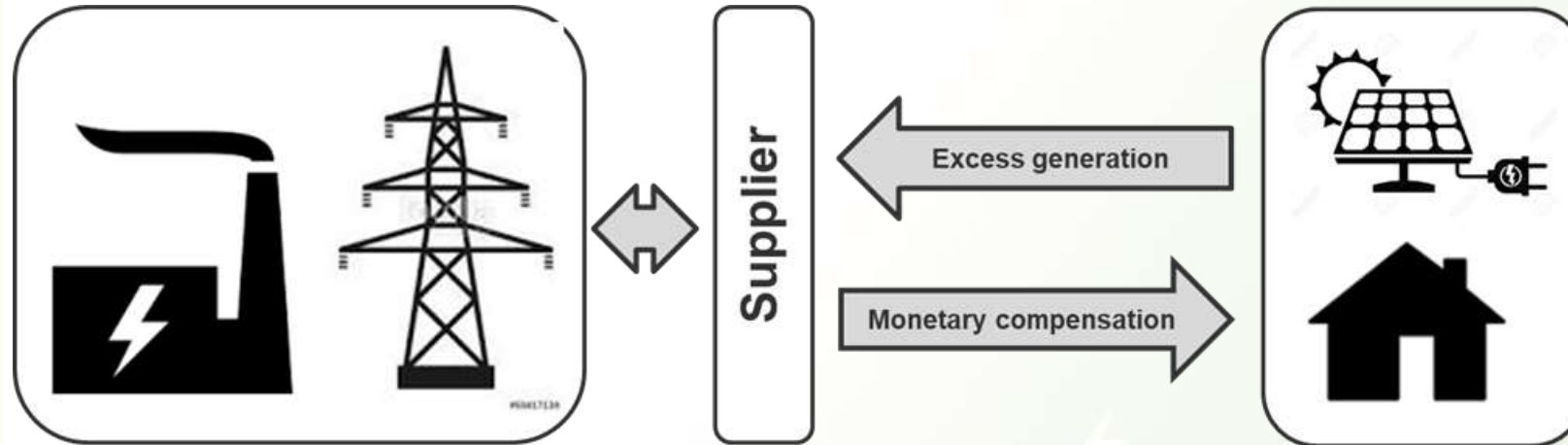


Assumption of a CO₂ emission factor for the Bosnian generation mix based on IEA assumptions (IEA, 2012)

Indirect Support - Balancing

- RE sources should finally have complete balancing responsibility, as all other participants on the electricity market in BIH (except very small RES installations, for example $P_i \leq 100\text{kW}$)
- Changes and amendments of the Law on RES in entities are necessary:
 - In RS current limitation should be „defrosted“ and trajectory for achievement of 100% of balance responsibility should be defined through the period of the several years
 - In FBiH balance responsibility should be defined in the Law on RES
- Balance intervals and schedule intervals should be 1h and 15'
- Good solution is separated balance groups for RES on the level of entities, or on the level of network operators
- Legislations should introduce institution of Aggregator for small RES installations and Prosumers
- Key roles of network Operators and Operators for RES in implementation

Net Billing



Net billing for production for own needs should compensate excess (surplus) of delivered electricity based on energy component of retail price, decreased by suppliers expenses.

- In accordance with the Energy Community Guidelines, producers for own needs should have possibility to choose support scheme between net billing and FIT as alternative.
- Network tariffs for producers for own needs within net billing should have significant capacity component, and small energy component, with a purpose of charging for network connection.
- VAT, as well as other fees and taxes, if any, should be applied only on the net consumption (within predefined time period)

Community Energy Projects (1)

Definition of RE community energy according to RED:

„Renewable energy community means a legal entity, including cooperatives

- i. which, according to applicable national law, is based on open and voluntary participation, is autonomous, and is effectively controlled by shareholders or members that are located in the proximity of the renewable energy projects owned and developed by that community;*
- ii. whose shareholders or members are natural persons, local authorities, including municipalities, or SMEs;*
- iii. whose primary purpose is to provide environmental, economic or social community benefits for its members or the local areas where it operates rather than financial profits.“*

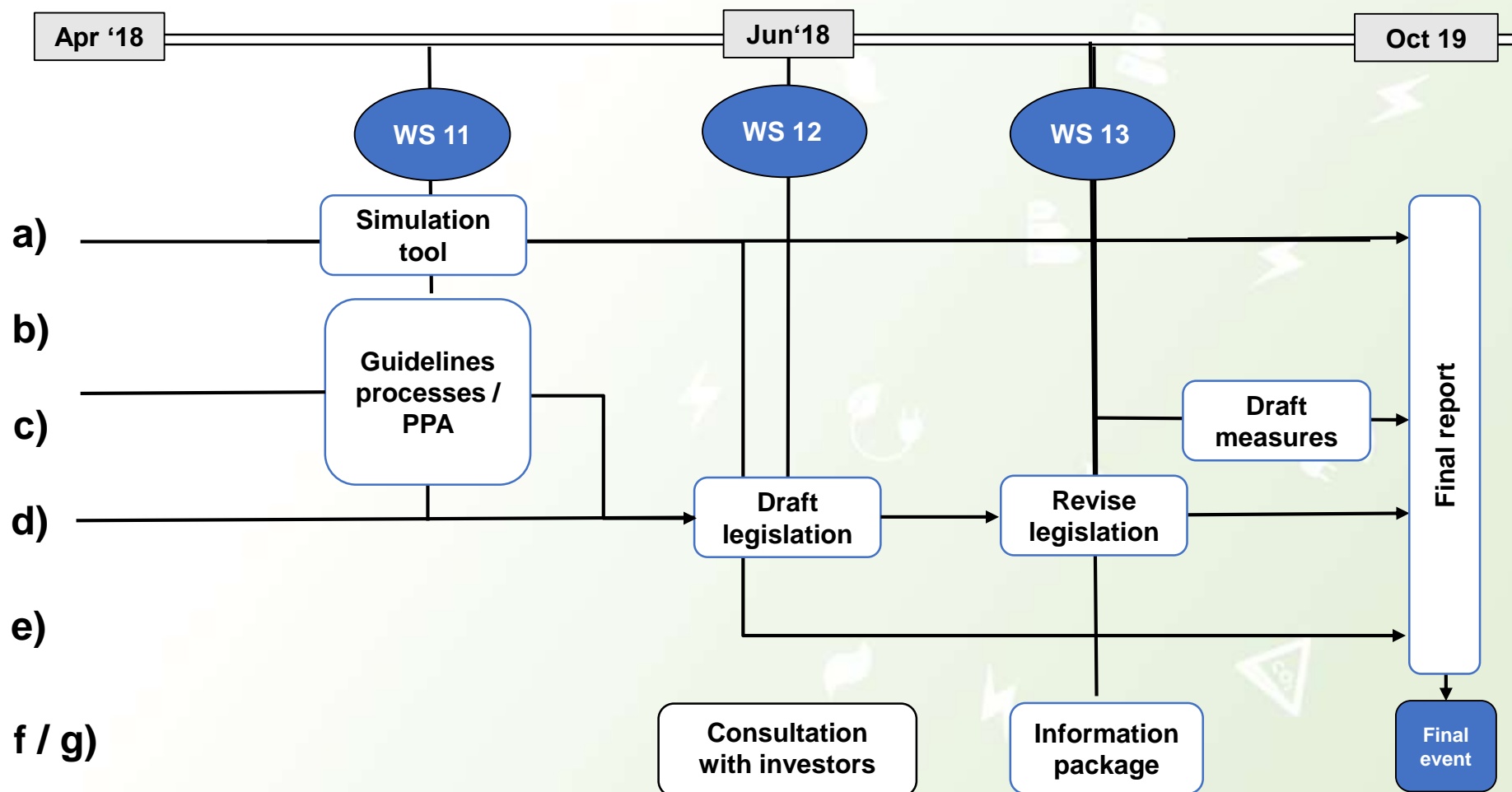
Community Energy Projects (2)

- Through the benefits of the realization of the community energy projects, part of the RES support funds returns to the „place of origin“ - end consumers of electricity in BIH.
- Implementation of Community Energy projects significantly increases awareness of the importance and value of the RES
- It is necessary to enable participation of community energy projects within foreseen main and complementary support schemes, such as:
 - Net billing (if/when enabled)
 - FiT for small installations / FiP for large installations
 - Supplementary exemption of taxes and fees payment
- Community energy projects should be additionally supported through:
 - Development of changes and amendments in relevant legal and regulatory framework
 - Definition of quotas/upper limits for community energy projects ,
 - Inclusion of Community Energy projects in strategies, action plans and RES targets

Tax Rebates

- Tax rebates for RES should be only complementary measures of support for **community-energy projects**
- Focus of tax support is incentive to projects which have significant public interest and which facilitate introduction of new technologies.
- Important principle is that disturbance in economy, caused by tax rebates, should be minimal or nonexistent
- Main proposals for tax rebates should be given as recommendation only.

Timetable of Next Activities



Planning of Finalization of the Project

- **WS 11 (mid-May)**
 - Draft guidelines on FIT, FIP & reference market price
 - Draft simulation tool FIT and auction caps
 - Draft RE auction guidelines
 - Draft PPA / FAA
 - Draft legislation / regulation (possibly incomplete)
- **WS 12 (mid-June)**
 - Finalization of guidelines, tool & documents
 - Information package/guidelines for investors
 - Presentation at investor event
- **WS 13 (early Sep)**
 - Final package, incl. report & all documents
- **Final event of project (beginning of October)**