EREF European Renewable Energies Federation

SMALL HYDROPOWER CHAPTER

Opportunities for the EU small hydropower sector under the EU Green Deal

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The EREF Small Hydropower Chapter

- Members: (small) hydropower associations from AT, BE, CH, CZ, DE, EE, EL, ES, FI, FR, IE, IT, LT, NL, NO, PL, PT, SE, SK
- Policy activities:
  - CIS process (Common Implementation Strategy for the Water Framework Directive (WFD)
  - EU energy policy
- Small hydropower industry promotion in and outside the EU (e.g. Hyposo project)

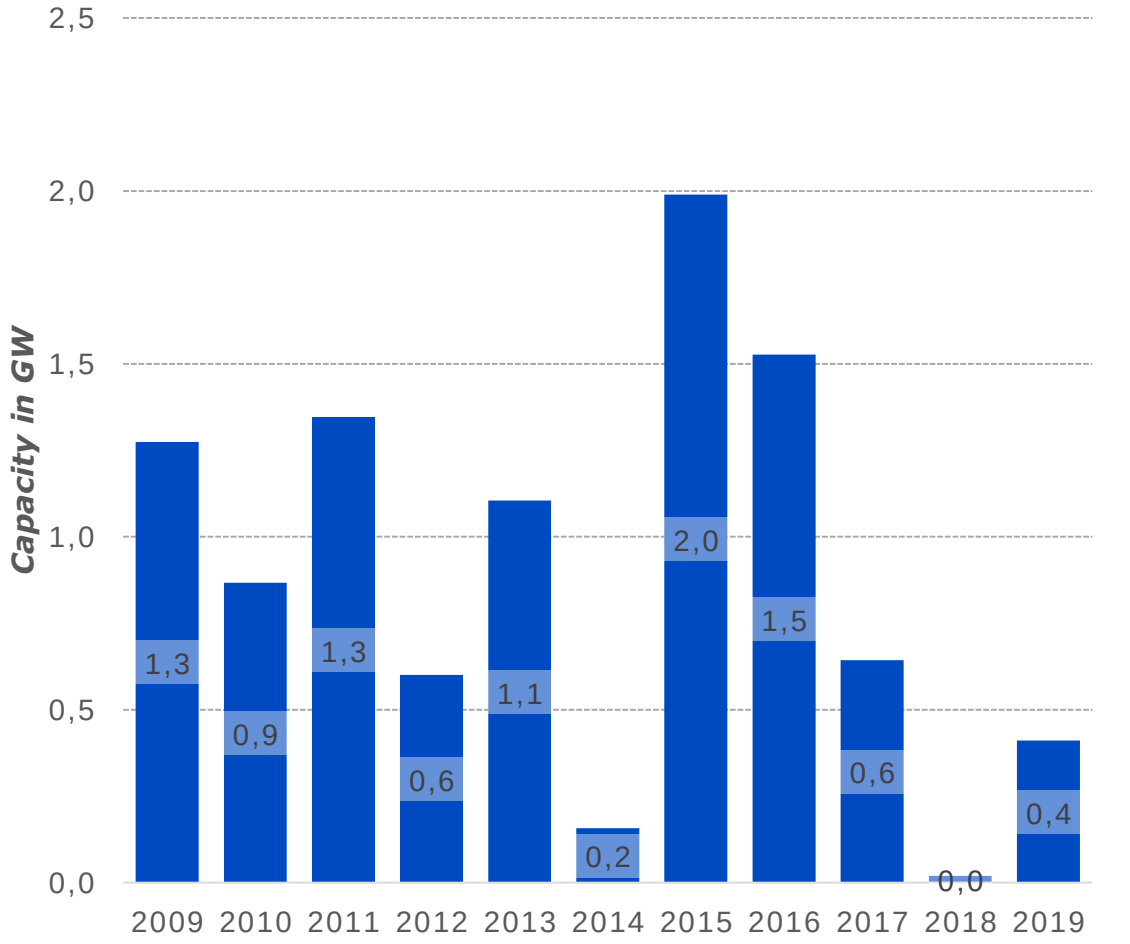
The EU small hydropower sector (EU-27)

- Around 22,000 plants (up to 10MW)
- More than 4,500 enterprises (mainly SMEs) with more than 60,000 professionals
- Electricity production for around 13 million households (out of ca. 195 million households; ≈ 6,7%)
- Considered as world technology leader (export)
- Development potential (ca. 280,000 abandoned plants; kinetic turbines and Very Low Head Turbines, hidden hydro)

Recent new hydropower development in the EU

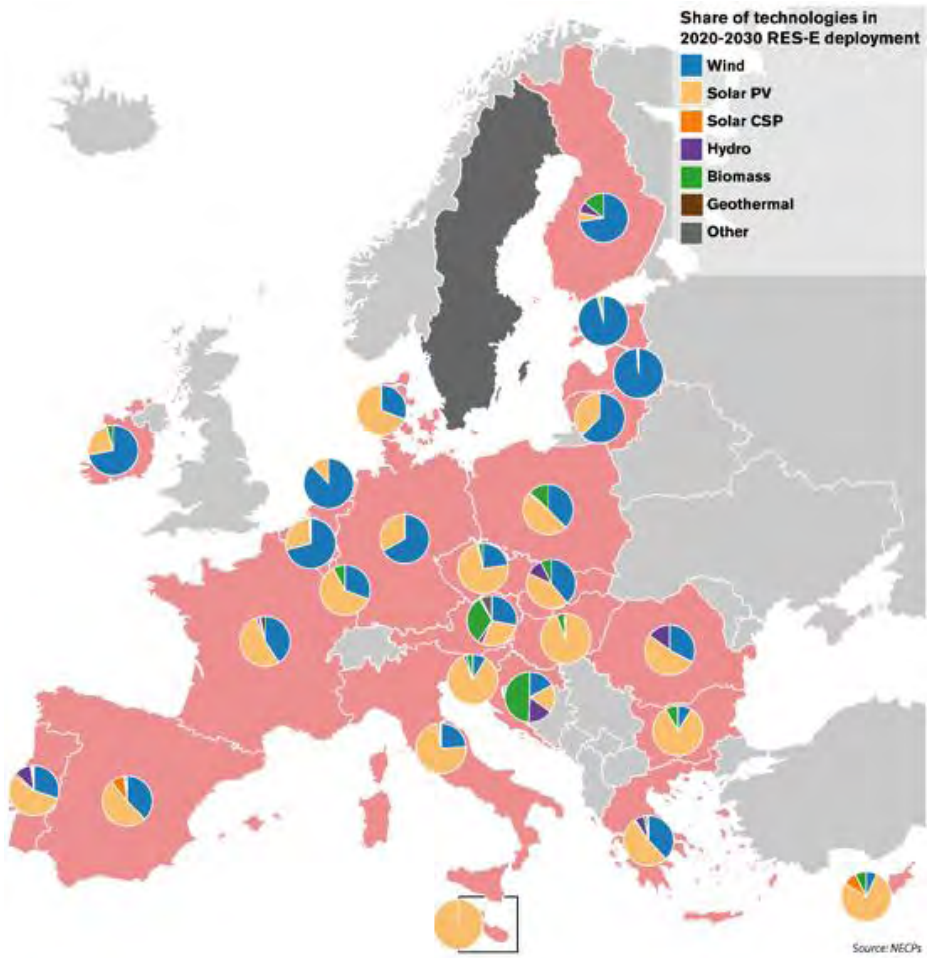
- Austria: 23%
- France: 14.7%
- Italy: 11%
- Spain: 10.1%
- Croatia: 9.6%
- Portugal: 7.2%

- Rest of EU: 24.4%



Source: eclareon 2021

Plans for new hydropower development according to NECPs



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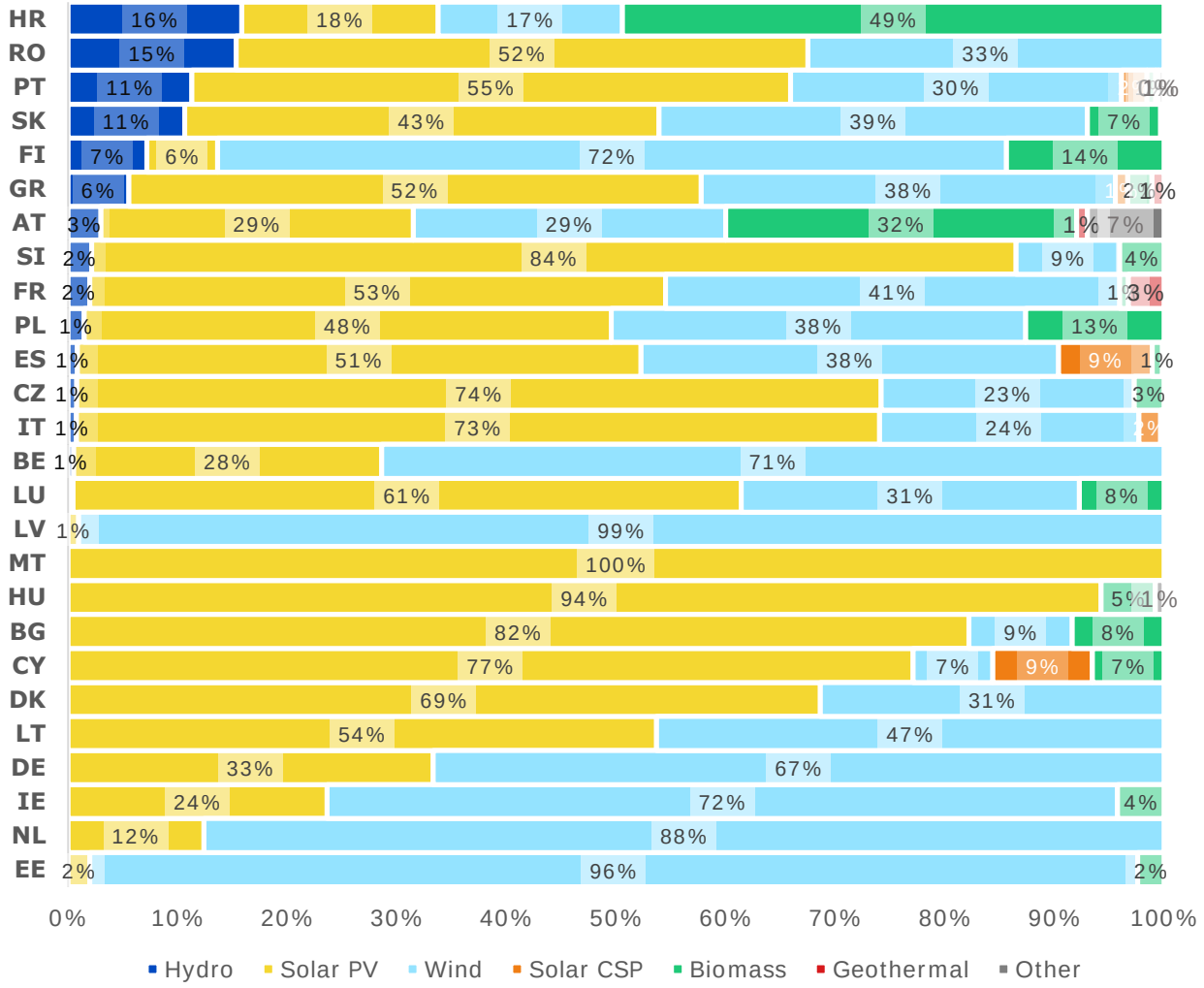

Small hydropower in the European energy system

- Electricity production
- Provider of energy system services and flexibility to facilitate the integration of large amounts of variable renewable energy sources into electricity grids
- Cost savings: avoided costs of ca. € 1 billion for grid stability only in Germany:
  - Reduction of need for grid expansion at the distribution grid level (esp. in rural medium-voltage and low-voltage grids)
  - Reduction of grid losses
- Security of supply in times of climate change
- Multi-purpose functions (e.g. flood protection, drought mitigation)

Water policy-related files under the Green Deal

Key EU legislation for SHP

- Renewable Energy Directive and REPowerEU
- Revision of the Electricity Market Design
- Water Framework Directive
- Nature Restoration Regulation

- Differences in national implementation of EU goals and principles
- Different law & admin systems throughout and within EU Member States

RED III and hydropower – recent policy work success

- Introduction of overriding public interest
- Rejection of ENVI amendments on small hydropower (amendments 22 and 107; small hydropower as major threat against biodiversity)
- Sustainability criteria for hydropower (Art. 29) including reference to WFD (which might be still removed)
- Amendment proposal to amend EU nature legislation

Key issues for hydropower in other files

- Revision of the Electricity Market Design
  - Remuneration via market premiums or two-sided CfDs?
  - Remuneration for system services?
- Water Framework Directive
  - CIS work on Art 4.7 on exceptions
  - Definition of free flowing rivers
- Nature Restoration Law
  - Barrier removal and (small) hydropower plants?

Impact of the regulatory framework on SHP

- Investment in upgrading and refurbishment of existing plants with new technology and environmental mitigation measures
- Easier administrative and permitting procedures
- Permits and concessions for (new) plants
- Residual flow obligations
- Remuneration of electricity production

Environmental mitigation strategy of small hydropower

- Continuous upgrading of existing plants
- Application of latest innovation and technologies
- Management methods (e.g. stop of plant during migration period)
- Instream and kinetic turbines
- Hidden hydro
- Continuous research on new type of turbines and environmental mitigation measures

Call for an entente-cordiale between energy and environment

- Fast deployment of all forms of renewable energies to ensure fast decarbonisation and end of environmental pollution through fossil fuels and nuclear
- Renewable energies need and are able to comply with EU nature legislation
- Joint policy work against impact on water bodies from industrial agriculture and urban development as well as chemical, pharmaceutical and organic pollution

How decision-makers can help the SHP sector

- Promote small hydropower as a substantial component of the renewable energy mix
- Establish European and national targets for small hydropower development until 2050
- Developing a harmonised framework for interpretation of European policies with site specific evaluation for small hydropower projects taking into account all dimensions of sustainability
- Using small hydropower as part and solution for water management policies
- Scientific assessment, clear definitions and a cost-benefit analysis as basis for environmental policies
- Developing support mechanisms for the multipurpose features & system services
- Continue research funding to ensure that European equipment producers maintain their world leadership on innovative hydropower solutions

Get engaged - ETIP Hydropower project

- **Based on Research and Innovation Agenda (RIA) and Strategic and Industry Roadmap (SIR) to provide consensus-based advice to the SET Plan (ETIP working group)**
  - EREF to coordinate and provide SHP input for ETIP working groups
  - EREF to ensure consistency between ETIP outputs and policy priorities
  - EREF to raise awareness for hydropower and its benefits and opportunities

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Thank You for Your Attention

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