Workshop on
ASSESSING THE WATER-FOOD-ENERGY-ECOSYSTEMS NEXUS AND
BENEFITS OF TRANSBOUNDARY COOPERATION
IN THE DRINA RIVER BASIN

Infrastructure solutions: Guiding Principles: Sustainable
Hydropower Development in the Danube Basin

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Danube River Basin

- 19 countries
- Most international River Basin in the World
- International Commission for the Protection of the Danube River (ICPDR)
- Contracting parties: 14 countries - 9 EU Member States, 5 Non EU Member States + European Union
Guiding Principles on Sustainable Hydropower

- Increased production and use of energy
- Reduced greenhouse gas emissions
- Development in line with relevant directives
Guiding Principles on Sustainable Hydropower
Participating countries and institutions

**Danube Countries**
- Austria
- Bosnia and Herzegovina
- Bulgaria
- Czech Republic
- Croatia
- Hungary
- Moldova
- Montenegro
- Germany
- Romania
- Republic of Serbia
- Slovak Republic
- Slovenia
- Ukraine

**European Commission**
- Directorate General Environment
- Directorate General Energy

**Stakeholders and NGOs**
- Association of Austrian Electricity Companies
- Danube Environmental Forum
- Energy Community Secretariat
- European Small Hydropower Association
- European Anglers Association
- International Association for Danube Research (IAD)
- International Hydropower Association (IHA)
- VGB Powertech (Verbund Hydropower AG)
- WWF International and DCP
Main elements

**Guiding principles**

- General principles
- Technical upgrading of existing hydropower plants and ecological restoration
- Strategic planning approach for new hydropower development
- Mitigation measures

Not legally binding but serving as a guidance for national application

National application
Two level assessment

1. National/Regional Level
2. Project specific level
Guiding Principles on Sustainable Hydropower Impacts

Altered flow regime

Altered sediment dynamics

Ecological impacts

(Mr. Raimund MAIR, 2015)
Guiding Principles on Sustainable Hydropower – good practice

Picture 1: Refurbished hydropower plant © Energie AG Oberösterreich

Hydropower plant Gottfrieding
Vertical slot pass

Hydropower plant Vohburg
Natural stream bypass
Thank you on your attention!!!