

Impacts of hydropower and core demands for hydropower

Stefan Hintersatz

Federal Agency for Nature Conservation

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Topics

- Impacts of hydropower
- Core demands for hydropower

Impacts of hydropower

- Shoring of free-flowing stretches of water
- Interruption of upstream and downstream straightened migration of water organisms
- Killing or injury of migrant fishes and other water organism by passing turbines
- Deficit and modification of habitats in river sections close to the hydropower plants
- Interruption and modification of natural dynamics and relationship between floodplains and river (retention and regulation of outflow)

Core demands for hydropower

(German Federal Agency for Nature Conservation – BfN)

General demands

- Existing free-flowing stretches of water → excluding hydropower
- No further expansion of small hydropower (<1MW power) → insufficient contribution for hydropower production (comparing to negative ecological effects) and for reducing emission of CO² (see Chapter 4.3.1 in the guidance paper)
- Ecological measures → highest priority for creation of passability (upstream and downstream) and ensure a minimal value of water output.

Core demands for hydropower

(German Federal Agency for Nature Conservation – BfN)

General demands

- Further important ecological measures to improve freshwater ecology 1)→ connecting floodplains and river (**groundwater related habitats; Chapter 4.4, Tables on p. 44- 46**) 2)→ transmission of floating debris 3)→ measures to improve structure and dynamic of water bodies
- No construction of new plants in protected areas. The use of existing plants in protected areas is connected with special requirements. Appropriate protection goals of protected areas have to be considered in case of modernizing existing plants.
- Centralization of single locations of hydropower plants for lower ecological impacts and for reduced costs of modernization.

Core demands for hydropower

(German Federal Agency for Nature Conservation – BfN)

Demands respective existing plants / transverse structures

- For using potential of hydropower → focus is on plants with a capacity between 1 MW and 5 MW to modernize for reducing ecological impacts and greater effectiveness in the generated power
- Hydropower plants should be build as far as the transverse structure is 1) water structurally necessary, 2) the operation of the hydropower plant is economically feasible and 3) an importance for use of renewable energy exists and nature conservation requirements are observed
- Existing small hydropower plants → consideration of possibilities to appropriate the modernization of hydropower plants or possibilities for deconstruction of plants