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Hydro Power Sustainability Criteria Catalogue

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Challenge – renewable energy and water protection

- Austrian energy strategy - ambitious objectives for renewables
- hydro power is important source of renewable energy
- possible environmental impacts
- WFD: no-deterioration-principle (exemptions are possible)

Weighing of interests

New modifications Art. 4 (7) WFD

WFD allows for deterioration caused by new modifications under certain conditions

- benefits of new modification are outweighing benefits of achieving WFD objectives
- there is no significantly better environmental option
- all practicable mitigation measures are set
- project and reasons for exemption are reported in river basin management plans

National River Basin Management Plan 2009

National RBM Plan includes measures relating to future hydropower development and the protection of ecological valuable water bodies:

- **criteria catalogue to support the application of Art.4(7)**
  - weighing public interests
  - additional support for the assessment of better environmental options
- **basic principle:** the higher the benefit of preserving the ecological status of a water body, the higher the energy output has to be – near natural waters (high ecological status) are principally of high value
- **criteria provide basis for possible further strategic planning** for hydropower development on regional level

Austrian Water Catalogue

- elaborated by the Ministry of Agriculture, Forestry, Environment and Water Management
  - in co-operation with the 9 Länder (regional administrations)
  - involvement of the stakeholders (energy sector, NGOs)

- published Jan 2012

  http://www.lebensministerium.at/wasser/wasser-oesterreich/wasserrecht_national/planung/Kriterienkatalog.html

Main goals

- assist water authorities in weighing diverse public interests
- propose relevant criteria
- ensure an Austrian wide common understanding and application of Art. 4 (7) WFD
- enhance transparency
- catalogue is a supporting tool - not predetermining the final decision of the authorities
- catalogue does not include “go” or “no-go” areas

Criteria

energy management:

- quantity of supply
- quality of supply
- contribution to climate protection
- technical efficiency

aquatic ecology:

- dimension of negative effect of the project
- naturalness
- rarity
- specific ecological function for the catchment area

other water management aspects:

- flood control
- sediment management
- groundwater quantity / quality
- drinking water supply
- surface water quality
- recreation/ tourism/ fisheries, …

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Energy Management - Criteria

3 assessment levels proposed:
high – medium - low

	run-of-river plants	*(pumped) storage plants*
quantity of supply	• electricity generation (GWh/a) • self-supply	• elec. generation (GWh/a)
quality of supply	• amount of generation in winter *(compared to generation per year)*	• peak capacity (MW) • stored energy (GWh) • pump capacity (MW)
contribution to climate protection	• CO_2-avoidance (1.000 t CO_2 eq.)	• CO_2 avoidance • support of integration of wind energy
technical efficiency	• distance to grid connection • exploitation rate of local and regional hydropower potential	• distance to grid (km/GWh) • exploitation rate (verbal) • degree of expansion

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Aquatic Ecology - Criteria

3 levels proposed:
high – medium - low

naturalness of water body	• ecological status • morphological status
rarity of water body type	• type • share of river km with good/high status left • length of free flowing river km left
specific ecological function for the catchment area	• essential habitat for sensitive fish species • essential habitat for other species • long-distance effects for ecosystem • functionality of river character (free-flowing sections)
dimension of negative effects of the project	• length of longitudinal effects • amount of lateral effects

Other Water Management Aspects - Criteria

effects on …

- **flood control**
- **sediment management**
- **groundwater quantity**
- **groundwater quality**
- **drinking water supply**
- **surface water quality**
- **recreation/ tourism /fisheries, …**

5 levels of effects

++	very positive
+	positive
0	indifferent
-	negative
- -	very negative

(verbal descriptions)

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Thank you for your attention

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