

Hydropower:

Each Type has its Niche



According to the context, hydropower is available ...

... on many scales



Small (Mini, Micro)

... involving several project types



Run-of-river



Medium



Reservoir (including multipurpose)



Large



Pumped storage

“UNEP is no longer concerned by the small or the large, but the well planned and well managed.”

Hydropower:

Appropriate Solutions According to the Needs

Depending on the type of project and its scale, the level of service (flexibility and reliability) differs

TYPE	SERVICE	IMPACT
RESERVOIR	<ul style="list-style-type: none">• Storage capacity of water and energy• Annual energy production• Instant generating capacity• Flexibility in providing base load and peak load services	<ul style="list-style-type: none">• Changes of habitat and social impacts through reservoir inundation• Modification of river flows
RUN-OF-RIVER	<ul style="list-style-type: none">• Base load with limited flexibility to follow variation in power demand	<ul style="list-style-type: none">• Limited flooding and changes to river flows
PUMPED-STORAGE	<ul style="list-style-type: none">• Storage capacity of energy• System security• Quality and reliability through ancillary services and peak-load support	<ul style="list-style-type: none">• Net consumer of electricity• Environmental impacts confined to small area
DIVERSION	<ul style="list-style-type: none">• Water and power supply	<ul style="list-style-type: none">• Flow reduction downstream of diversion• Increase of flow in receiving stream
UPGRADING	<ul style="list-style-type: none">• Extends project life, sometimes with increased output	<ul style="list-style-type: none">• Few additional impacts
MULTI-PURPOSE	<ul style="list-style-type: none">• Can include irrigation, flood mitigation, water supply, environmental management, transportation, ground water recharge, recreation, climate change protection...	<ul style="list-style-type: none">• Impacts mainly due to reservoir• Need to evaluate cumulative impacts of other water uses

In general, the larger the storage volume, the greater the multi-purpose benefits.

Small hydro has been responsible for bringing the first power and light to remote villages – urban areas are most efficiently supplied by full-scale power systems.



*If you want a cup of coffee,
you buy a small container of milk.
If you need to feed a family,
you would buy a carton.*



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