

## Small Hydropower and a Federal Renewable Electricity Standard



Several draft bills are currently being discussed to create a federal renewable electricity standard (RES) that will require the United States to draw a percentage of its electricity from renewable energy sources. As currently proposed in many drafts, conventional hydropower is not eligible to count towards the standard of renewable energy. However, there have been efforts to include hydropower facilities under 50MW in the standard.

The Coalition believes that generation capacity of a project is not a good criteria to provides incentives to hydropower projects. In fact, some low power projects are much more harmful than some big projects that are operated well. We believe that all new sources of renewable energy must be sited and developed in a manner that protects the local environment. We should not, in the name of renewable energy development, destroy the very resources we are trying to protect from the effects of climate change. constraint

### ***1. Small hydropower projects cause harm to the ecosystem.***

The assertion that small hydropower dams are by nature less harmful than large ones is simply not true. Ninety percent of non-federal hydro projects are under 50MW but they combine to produce less than 13% of the total generation capacity. Hundreds of these low power projects can have tremendous impacts on ecosystems while only producing a nominal amount of power. There is no meaningful correlation between the size of a dam and its impact on the environment. All dams degrade water quality, harm river-dependent species, limit downstream recreational opportunities, and require roads, transmission lines and infrastructure.

### ***2. Existing small hydropower projects should not receive the same treatment as other existing renewable sources.***

Rewarding existing energy capacity defeats the goal of RES to develop new renewable energy sources and to generate new technology, science, and jobs needed to spur the economy. Renewable energy policy should focus on developing and improving innovative and low-impact technologies that will drive further investment down the road. Conventional hydropower dams (regardless of size) do not represent this kind of smart investment: the technology is stable and mature and does not need any additional incentives.

### ***3. All hydropower is not energy efficient.***

Any conventional hydropower to be included in a RES should be limited to projects that use existing water and infrastructure and do not place additional stress on river ecosystems. Such developments (efficiency upgrades at existing dams, adding hydropower to non-power dams, and new technologies) are already included.

### ***4. Hydropower is not always a clean renewable energy source.***

For conventional hydropower, while the green house gas emissions (GHG) are small, the impacts on river ecosystems are significant and well documented. Conventional hydropower typically has the greatest environmental footprint per installed MW of all the renewable energy technologies. Its heavy footprint is due to the fact that dams are sited in the middle of aquatic systems, which, on average, are the most diverse and productive habitats of the temperate zone, especially the arid West.

### ***5. Hydroelectric energy is not always efficient or economic.***

Determining the economic value of hydropower must also take into account the environmental and societal impacts and costs. Many dams are neither efficient nor economic, and their reliability may decrease as climate change alters fundamental patterns in rain and river flow, how water is used, and the ecosystems upon which humans, fish and wildlife depend. Building new dams is hugely expensive especially when most productive sites have already been developed and when only inefficient low-power dam sites remain.

### ***6. Hydropower has other costs associated with it.***

All renewable energy generation has costs associated with it, including wind and solar. Hydropower is not always low cost when you factor in the environmental and societal impacts. A recent study by Stanford's Atmosphere & Energy Program examined various energy sources and technologies and ranked them relative to a number of environmental and social impacts -- hydropower ranked just ahead of coal and nuclear. Among renewables, conventional hydro ranks lowest in the benefits-to-impacts ratio. Hydropower leaves behind disrupted river flows, slowed, broadened and warmed rivers, degraded water quality, blocked nutrients and sediment, impeded migration of fish and other aquatic species, and eliminated recreational opportunities.