Tidal Energy: An Alternate Source of clean energy

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Tidal energy is more reliable than other forms such as solar & wind. Energy is trapped basically in 3 ways i.e. Wave Energy, Tidal Energy, Ocean thermal Energy either by tidal basin, tidal barrage or tidal fens & turbines. In environmental sustainability point of view it's the best alternate source of energy as the tides are predictable, reliable with low environmental impact. There is no chance of emission of harm full gasses, it decreases the need of nuclear power. If the environmental impact is concerned it may have a negative impact on seashore ecosystem, recreation & navigation but these are less concerned as it’s depending on geographical area. The main challenges include high investment, low head of water that sometimes restricts the efficiency of turbine & damage of machinery due to salty environment.

In the global scenario less no of tidal energy stations are there due to maybe the above cause. The largest energy dam present in France (La Rance station) that generates 240 MW power. The other energy sites include: Annapolis Royal in Nova Scotia (20 MW), Murmansk in Russia (0.4 MW), Sihwa Lake Tidal Power Plant-South Korea (254 MW), Jiangxia Tidal Power Station, -China (3.2 MW). Soviet Union at Kislaya Guba (1.2 MW), Jindo Uldolmok Tidal Power Plant- South Korea is a tidal stream generation scheme (planned to be expanded 90 MW by 2013), Strangford Lough -Northern Ireland (2.1 MW), Ganghwa Island -South Korea (planned 812 MW by 2015) etc. In India Gujarat Asia’s 1st commercial-scale tidal power of 50 MW is under construction. The global tidal power is expected to exceed 450 TW mostly in Asia & North America.