

Salmon and Renewable Energy- Challenges for the Futures



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Wind power...



Solar power...

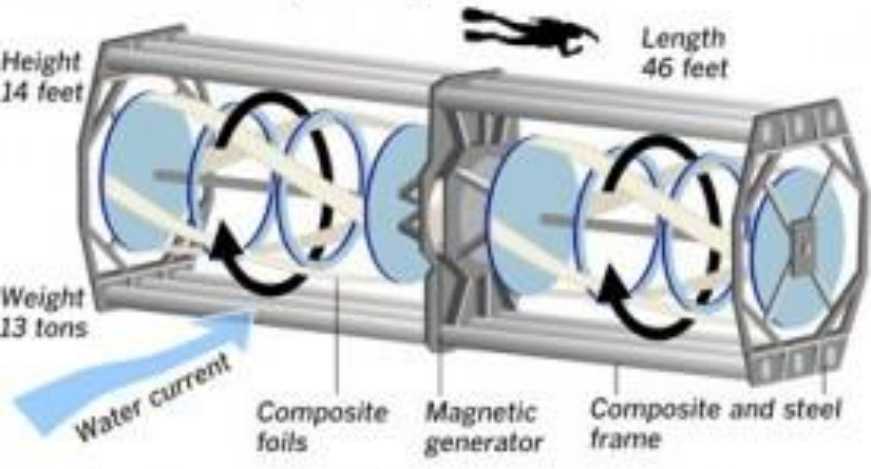


Hydrokinetic power

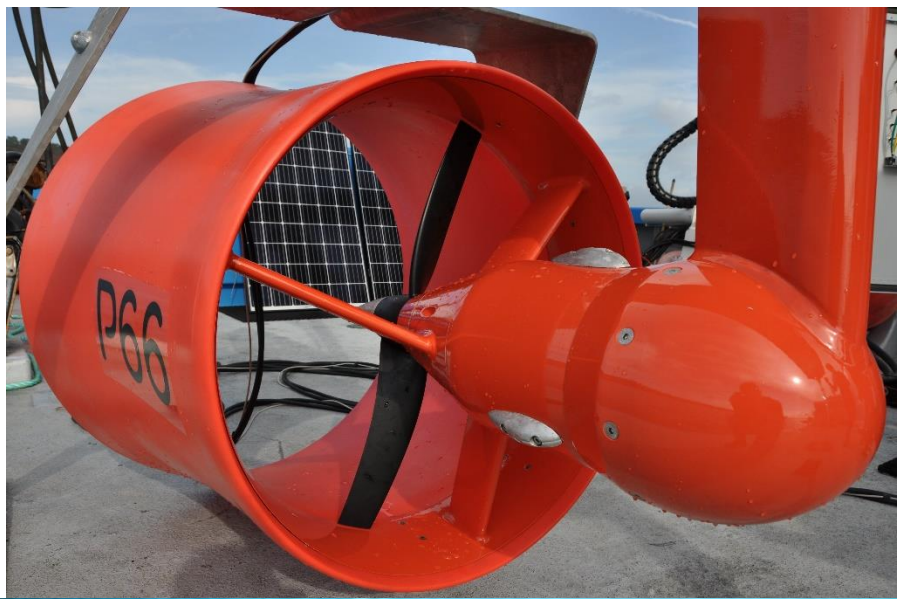
Underwater turbines being tested in Cobscook Bay, Maine, rely on the force of water from incoming and outgoing tides to generate electricity. A larger system is expected to be connected to the power grid next year.

Turbine generator unit

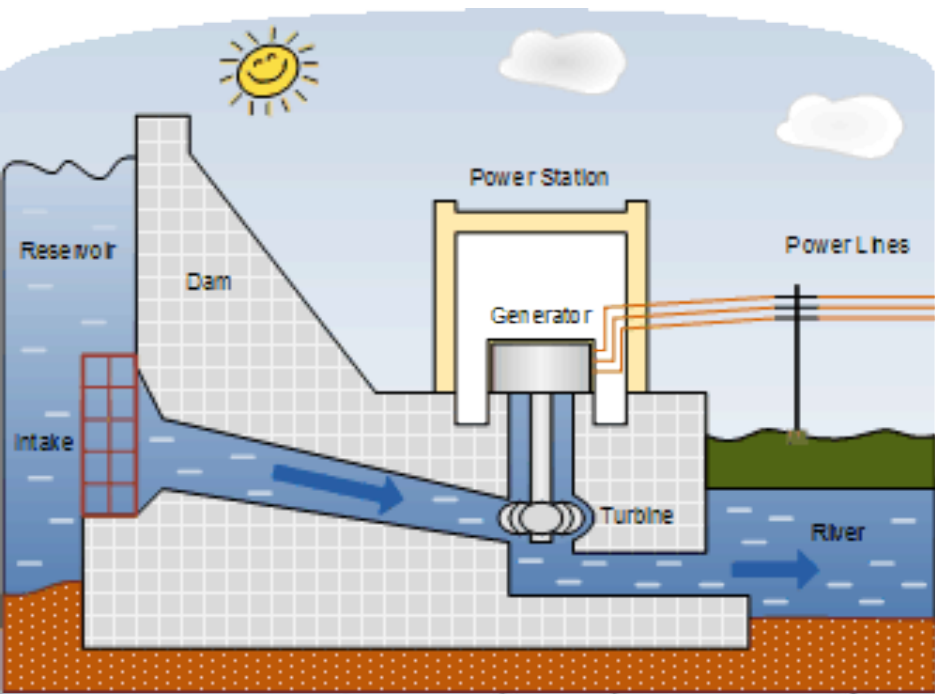
The unit faces the incoming tide, then turns 180 degrees to face the shore during the outgoing ebb tide.

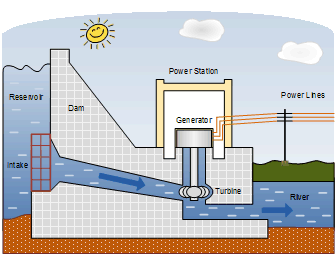


Source: Ocean Renewable Power Co. Graphics reporting by JULIE SHEER
KHANG NGUYEN Los Angeles Times



HYDROELECTRIC PROJECTS





- MULTILATION BY TURBINES
- INCREASED PREDATION DUE TO TURBINE INJURIES
- INCREASED PREDATION DUE TO FUNNELING ALL MIGRANTS INTO CONFINED AREAS
- DELAYED MIGRATION- BOTH UPSTREAM AND DOWNSTREAM
- LOSS OF FISH– SOME NEVER PASS
- SIZE SELECTIVE BIAS OF FISHWAYS
- DEGRADED WATER QUALITY, E.G. DISSOLVED OXYGEN, WARMER WATER
- ARTIFICIAL FLOW REGIMES
- LOSS OF RIVERINE HABITAT
- REFUGES FOR NON-NATIVE SPECIES



PROBLEMS

- HYDROELECTRICITY IS CONSIDERED GREEN
- MANY ARE ADVOCATING HYDRO AS RENEWABLE ENERGY
- IN THE U.S., MANY STATES HAVE PASSED REGULATIONS REQUIRING ELECTRICAL PROVIDERS TO HAVE A “GREEN PORFOLIO”
- FINANCIAL INCENTIVES TO BUILD MORE HYDRO
- AS STATES/PROVINCES/CITIES SEEK TO REDUCE USE OF FOSSIL FUELS, EXISTING DAMS LOOK LIKE OPPORTUNITIES
- DOESN'T MATTER IF RETROFITTING A DAM WOULDN'T MAKE SENSE— COMPANIES HAVE TO BUY THE POWER. SUBSIDIES.
- THERE IS A MISCONCEPTION THAT FISHWAYS CAN SOLVE ALL HYDRO-FISH CONFLICTS.

RESPONSES

- EDUCATE THE PUBLIC ABOUT THE PROBLEMS WITH HYDRO- NOT JUST FOR FISH
- PRESS GOVERNMENT AGENCIES TO ADOPT 'SUSTAINABLE' CRITERIA TO BE CONSIDERED FOR 'GREEN CREDITS'
- PARTICIPATE IN THE POLITICAL PROCESS AT THE LOCAL AND REGIONAL LEVEL TO LEAD OPPOSITION TO SENSELESS HYDRO DEVELOPMENT
- PROMOTE OTHER FORMS OF RENEWABLE ENERGY
- SUPPORT EFFORTS TO MAKE EXISTING HYDRO IMPROVE PERFORMANCE FOR PASSING AND PROTECTING FISH
- RESIST HATCHERY MITIGATION FOR DAMS

- Safe, timely and effective u/s and d/s fish passage
- Run-of-run operation
- No degradation of water quality
- In compliance with all permits/licenses