Hydroelectric Power Program
CURRENT EVENTS CREATE CURRENT OPPORTUNITIES

The current clean and renewable energy development opportunities in Massachusetts (and the region) are affected by the following:

- New Hampshire denied Northern Pass a permit, thereby jeopardizing Massachusetts’ ability to meet the Global Warming Solution Act's mandate with 1,090 MW of hydroelectric power from Canada.
- Small hydro is a small business opportunity that should appeal to the current federal administration, including FERC’s Neil Chatterjee.
- Smarter grids accommodate smaller distributed energy sources.
- The cost of storage and solar is coming down fast.
- New Englanders oppose heating and electrical generation by fossil fuels.
- The perception that Massachusetts needs pipelines to meet peak demand is erroneous.
A HYPOTHETICAL SOLUTION

A hypothetical distributed hybrid hydro/solar/storage energy system lets us discuss:

(1) the state and FERC barriers to implementation and
(2) its ability to contribute to a base peak energy source.

We can call it an “Underutilized Hydro Resource and Base Peak Energy Aggregation Development Proposal”
AGGREGATOR / DISPATCHER
12 facilities: 7 MW, 133 MWh
(Hydro – 100% CF)
PERTINENT DRIVING FACTORS

- Capturing and using energy from a hydro facility 24-7 and from a solar facility during the day that exceeds daily current needs
- Using that energy when cost effective behind the meter, including for accessible micro grids
- Using existing (and lobbying for new) FERC, ISO NE and state regulations to be able to discharge battery stored hydro- and solar-sourced power into the ISO NE grid and to reduce the upfront and soft costs
- Aggregating the stored excess energy from multiple hydro- and solar-battery augmented sources
- Selling and dispatching that stored excess energy to ISO NE at satisfy peak demand and price
- Improving aggregator and dispatcher access to purchasers or users
PURCHASERS AND USERS

1. Landowner:
   - Off-grid and behind the meter consumption
   - Supplemented by grid supplied power: either to an aggregated facility tied to the grid or to a separate off grid facility as regulations require

2. Micro-grid
   - for behind the meter use at peak power demand
   - need distribution network
   - possibly at an industrial site

3. ISO NE
   - Need aggregator, dispatcher and bidding protocol
   - Need grid able to accept energy aggregated from multiple entry points
   - Minimum bid needs to be lowered and permitted at peak demand
New England’s potential non-powered dam (NPD) capacity (2012)

1.11 Terawatt hours per year 243 MW per:

MASSACHUSETTS HYDROELECTRIC (not Hydrokinetic) POWER

Large Hydro: 30 or more MW  
Small Hydro: 100 kW to 30 MW  
Micro Hydro: less than 100 kw

Hydropower - Eligibility

• Facilities must be qualified for the Massachusetts Renewable Energy Portfolio Standard (MA RPS), or demonstrate a high likelihood of qualifying. The Massachusetts Department of Energy Resources (DOER) grants MA RPS qualification for Class I (new facilities) and Class II (existing facilities). See MA RPS qualification applications.

• The applicant’s facility must be licensed by the Federal Energy Regulatory Commission (FERC), have an order from FERC indicating that it is non-jurisdictional to FERC, or have a determination from FERC that it is a "qualifying conduit hydropower facility."
CURRENT LAW AND PENDING MASS BILLS

Current legislation

- applies to a “new facility or increased capacity or efficiency at each such existing facility” up to 30 MW capacity.

- provides that “energy from existing facilities up to 7.5 megawatts shall be considered renewable energy” (and excludes pumped storage and a new dam or water diversion structure constructed later than January 1, 1998”

Pending bills

- **H.1757 An Act relative to renewable energy certificates.** ii Similar provisions are in **S.1851, An Act relative to renewable energy portfolio standards.**

- **H.2697 An Act relative to small hydro** amends c. 164, Section 139A to require the DPU to require the electric distribution companies to amend the net metering tariff to create a program for small hydroelectric power net metering facilities in the commonwealth.