



Growth Track Projects

- Improve Technology Costs and Performance (17 projects)
- Develop Environmentally Sustainable Hydropower (2 projects)



Optimization

- Optimize technical, environmental, and water-use efficiency of existing fleet
- Collect and disseminate data on new and existing assets
- Facilitate interagency collaboration to increase regulatory process efficiency
- Identify revenue streams for ancillary services

Growth

- Lower costs of hydropower components and civil works
- Increase power train efficiency for low-head, variable flow applications
- Facilitate mechanisms for testing and advancing new hydropower systems and components
- Reduce costs and deployment timelines of new PSH plants
- Prepare the incoming hydropower workforce

Sustainability

- Design new hydropower systems that minimize or avoid environmental impacts
- Support development of new fish passage technologies and approaches
- Develop technologies, tools, and strategies to evaluate and address environmental impacts
- Increase resilience to climate change

Recent Accomplishments:

- **September 2015: \$6.5 million** awarded to seven organizations to advance the **manufacturing and installation of low-environmental-impact hydropower technologies**
- **July 2016:** Published a long-range national **Hydropower Vision** report to establish the analytical basis for a new era of growth in sustainable domestic hydropower over the next half century

Future Initiatives:

- Results of an FY 2016 **test facility feasibility effort** will be leveraged to initiate work on location, design, and cost estimate of a **Federal Hydropower Test Site**
- Six organizations will begin work to develop innovative technologies that reduce capital costs and deployment timelines for **pumped-storage hydropower and non-powered dams**
- Continuation of 3-year project to define a new class of **standard and modular hydropower technology** that will deploy at significantly **reduced cost, with smaller physical and environmental footprint**



Young's Creek Hydro Project in Washington State, 2011 (7.5MW)

Agenda - Tuesday, February 14

- Modular Pumped Storage Hydropower Feasibility and Economic Analysis - Boualem Hadjerioua, ORNL
- Standard Modular Hydropower (SMH) - Brennan Smith, ORNL
- Workforce, Education, and Training Needs Assessment for U.S. Hydropower - Jay Paidipati, Navigant Consulting, Inc.
- Hydro Research Foundation University Research Awards Program - Brenna Vaughn, Hydro Research Foundation

LUNCH

- The 45 Mile Hydroelectric Project - Jim Gordon, Earth by Design, Inc.
- SLH100 Demonstration Project at Monroe Hydro - Abe Schneider, Natel Energy, Inc.
- Demonstration of Variable Speed Permanent Magnet Generator at Small, Low-Head Hydro Site - David Brown Kinloch, Weisenberger Mills, Inc.
- Demonstration of a New Low-Head Hydropower Unit - Wayne Krouse, Hydro Green Energy, LLC
- South Fork Powerhouse Project - David Hanson, Sacramento Municipal Utility District
- Harnessing the Hydroelectric Potential of Engineered Drops - Jerry Straalsund, Percheron Power, LLC

BREAK

- Cellular Cofferdam for Hydropower Use - Marte Gutierrez, Trustees of the Colorado School of Mines
- Cement Changes and Solutions to the Industry - Todd Sirotiak, North Dakota State University
- Optimized Composite Prototype for Archimedes Turbine Manufacture - Jerry Straalsund, Percheron Power, LLC
- The Design and Development of a Composite Hydropower Turbine Runner - Pat Hipp, Composite Technology Development, Inc.

Agenda - Wednesday, February 15

- Modular Low-Head Hydropower System - David Duquette, Littoral Power Systems, Inc.
- French Modular Impoundment - Bill French, French Development Enterprises, LLC
- Cost-Optimization Modular Helical Rotor Turbine-Generator System for Small Hydro Power Plants - David Yee, Eaton Corporation
- Rapidly Deployable Advanced Integrated Low Head Hydropower Turbine Prototype - Arnie Fontaine, Pennsylvania State University

BREAK

- Magnetic Gears for Hydropower Drivetrains - Emily Morris, Emrgy, Inc.