



*AMP Hydro Phase II
Meldahl-Greenup*

*City of Martinsville, Virginia Presentation
November 10, 2009*

MEETING AGENDA

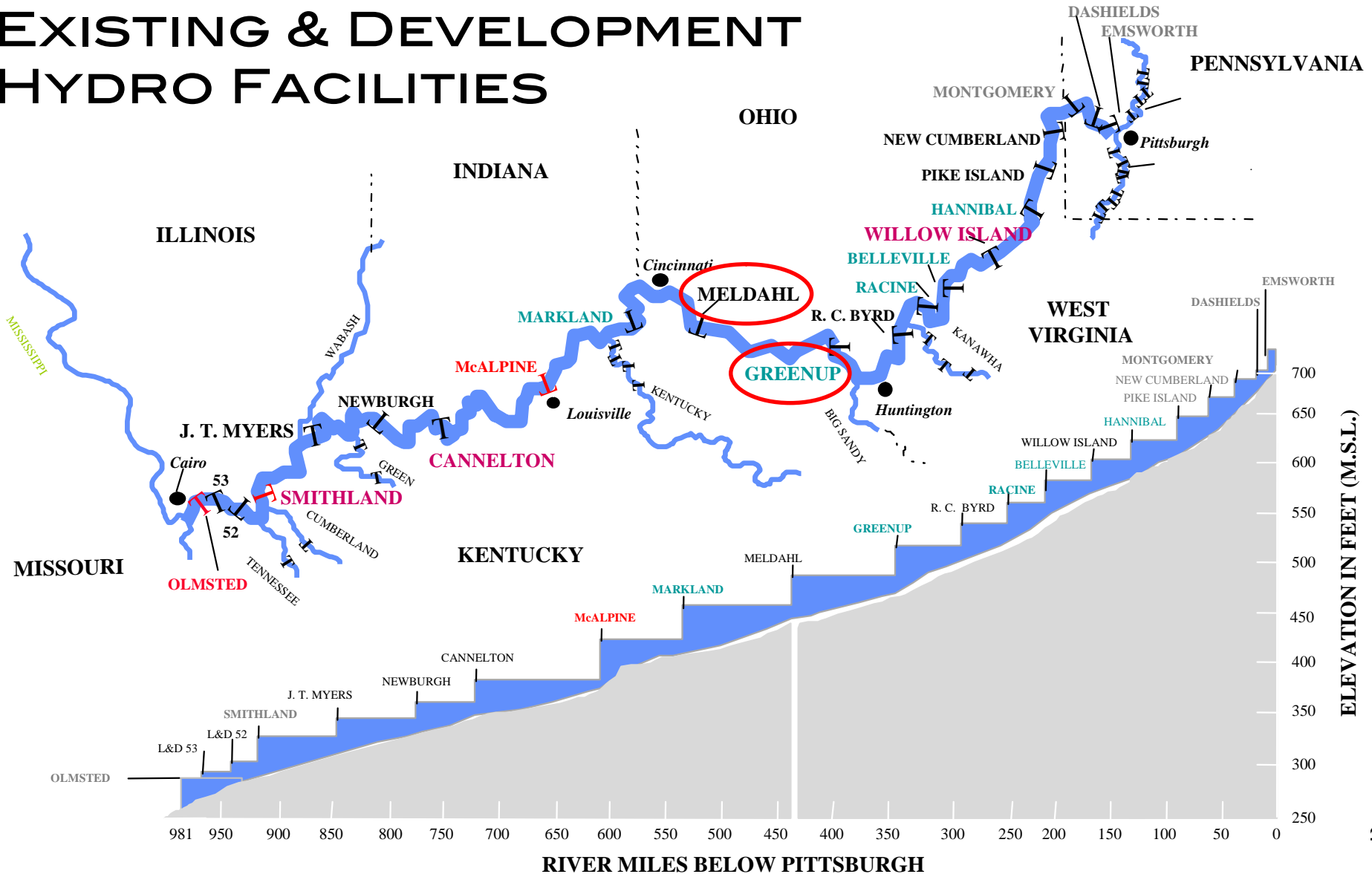
- Meldahl-Greenup Hydro Projects...
 - History & Development
 - Meldahl Project Status & Action Items
 - Greenup Project Status & Action Items
 - Project Schedule
- Project Costs, Risks and Benefits
- Key Provisions in Power Sales Contract
- Member Power Supply Study Results
- Summary

HYDRO PROJECTS

MELDAHL-GREENUP



EXISTING & DEVELOPMENT HYDRO FACILITIES



HYDRO PROJECTS DEVELOPMENT

- Phase I Hydro Projects
 - Cannelton, Smithland and Willow Island (208 MW)
- Phase II Hydro Projects (~175 MW)
 - Meldahl (105 MW)
 - Greenup (70 MW)
- Potential Phase III Project
 - RC Byrd (48 MW)
- Meldahl FERC license awarded to the City of Hamilton, Ohio (AMP member)
- Greenup Hydro Facility in operation for 20 years
 - Owned and operated by the City of Hamilton
- Hamilton interested in partnership with AMP on development of Meldahl and ownership of Greenup

HYDRO PROJECTS DEVELOPMENT

- The Meldahl-Greenup Participation Agreement was executed on March 1, 2009 by AMP, the City of Hamilton, Ohio and Meldahl, LLC (Delaware limited liability company)
- AMP to own Meldahl plant with 51.4% output share to Hamilton and 48.6% to AMP
- AMP to purchase Greenup with 51.4% output share to Hamilton and 48.6% to AMP
- Transfer of Greenup ownership to AMP upon commercial operation of Meldahl

MELDAHL-GREENUP HYDRO PROJECTS

- Sawvel retained to perform Feasibility Study
 - Feasibility study was completed in October 2009
- Meldahl:
 - MWH retained to perform design/engineering during construction and Resident Engineering
 - Conventional bulb-type turbine-generating units
- Greenup:
 - Benham Companies retained to perform an evaluation of the overall condition and value of the existing facility

MELDAHL PROJECT STATUS

- The project will be operated as a run of the river plant
- Meldahl is currently licensed to Hamilton by FERC; a co-license transfer will occur to AMP upon reaching 100% subscription
- The physical life of Meldahl is expected to be at least 50 years from the beginning of commercial operation coinciding with the term of the License, which will be extended.
- AMP entered into contract with Voith to supply the three turbine generators
- New transmission line will be constructed to deliver power from the site to the RTO; options are under consideration

MELDAHL PROJECT STATUS

- AMP has requested interconnections to the RTOs for Meldahl
 - AMP and Hamilton plan to request that FERC amend the FERC license to allow direct interconnections to MISO or PJM
 - Help to minimize transmission service costs
- Transformer Contracts sent out October 19, 2009
- Bids for Gate Equipment have been received and are being contracted on a phased-in basis
- 404/408 permits are expected to be issued in winter 2009

MELDAHL ACTION ITEMS

- Continuation of FERC Regulatory Compliance 404 & 408 License Articles
- AMP intends to issue bonds to provide permanent financing following and subject to its receipt of the 404 permit
- AMP and Hamilton issued cofferdam bids in September 2009 with Bids due December 4, 2009
- Powerhouse construction contract expected to bid in late 2010
- AMP received \$20M in Clean Renewable Energy Bond funding for Meldahl

GREENUP PROJECT STATUS

- Owned/operated by the City of Hamilton, OH under FERC License
 - Issued on March 29, 1976; expires Feb 28, 2026 (17 years)
- Consists of three 24.3MW turbines (Rated output = 70.2MW)
 - Staffed 24 hrs/day by four shifts – two operators per shift
- Greenup is interconnected to East Kentucky Power Cooperative and ultimately AEP
 - 15-mile 38kV transmission
 - Contract ends December 31, 2010
- AMP and Hamilton are seeking a direct interconnection with PJM
- Greenup to be operated as a run of the river plant

GREENUP PROJECT STATUS

- Benham Companies evaluation of performance and value
 - Plant has been well maintained and still performing well since implementation in December 1982
 - Historically low maintenance costs due to quality of this unit
 - Positive revenue generating opportunity
 - Useful life expected to extend to 2056, with recommended replacements
- EPA records show no record of the City of Hamilton as having an enforcement action against them
- No state agency representative contacted indicated that a permit of any kind was required for the project
- Plant scheduled for exciter upgrade in the coming months, prior to AMP taking ownership
- The AMP purchased price in 2014\$ is a present value of \$139M

GREENUP ACTION ITEMS

- The Greenup Plant is in excellent condition, however...
 - Units will need to undergo rehabilitation work before the license expires; estimated in 2027
 - Upgrade of the generator control system should be considered (5-10 years); obsolescence and spare parts issues with existing components
 - A number of components are reaching the industry expected service life; indicates increased maintenance in the future to be considered during negotiations

TOTAL FINANCIAL REQUIREMENT

Table S-1
Total Financial Requirement of the Projects
AMP

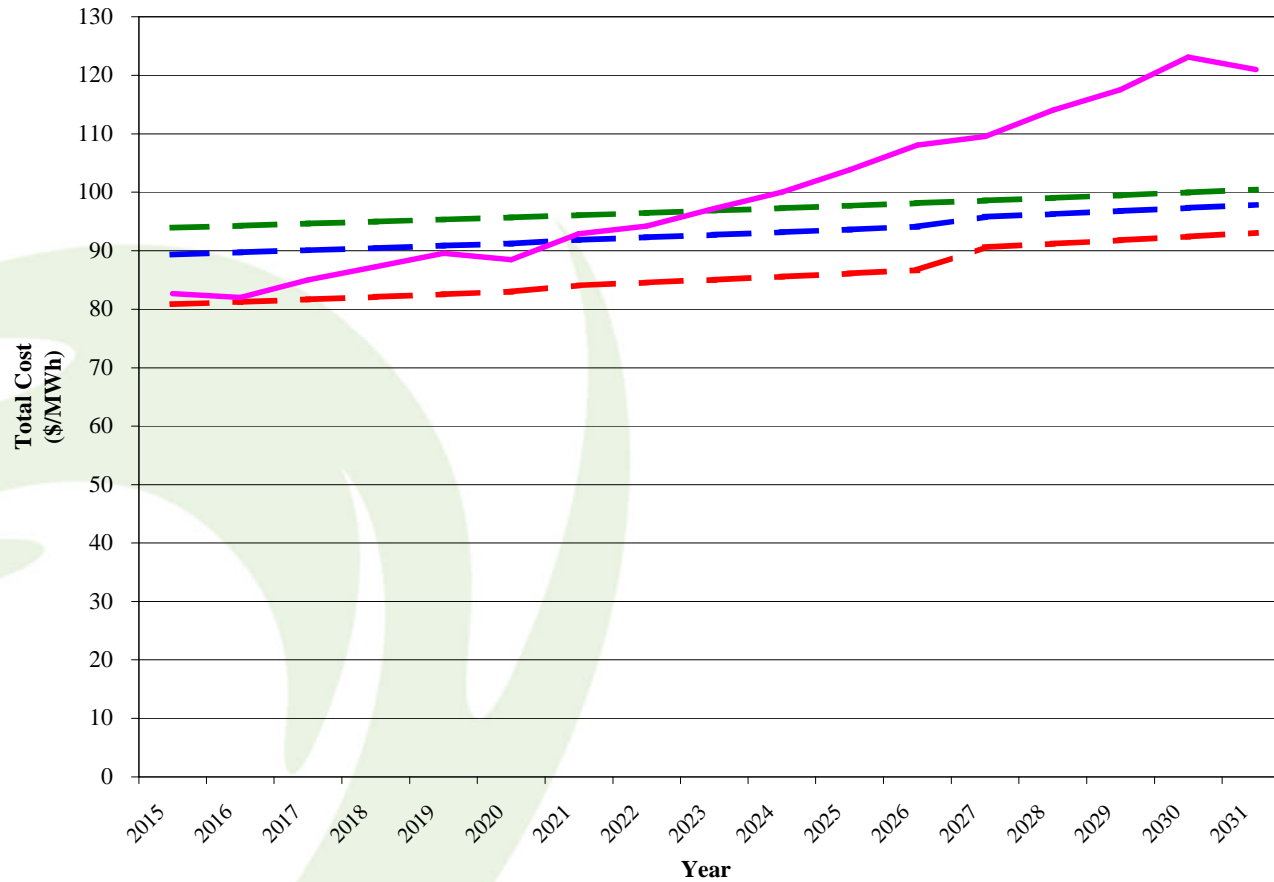
Expense Item	Meldahl ⁽¹⁾	Greenup ⁽¹⁾	Total	85.1 MW ⁽²⁾
Deposit to Project Fund/Participation Payment	459,221,235	139,000,000	598,221,235	362,050,314
Deposit to Capitalized Interest Fund	142,444,542		142,444,542	69,187,349
Deposit to Debt Service Reserve Fund	42,964,956	9,138,453	52,103,409	30,007,146
Cost of Issuance and Additional Funds	6,514,267	1,496,348	8,010,615	4,660,420
Total Financial Requirement	651,145,000	149,634,801	800,779,801	465,905,229
(\$/kW)	6,201	4,388	5,757	5,475
Average Annual Net Debt Service⁽³⁾	40,563,181	9,138,453	49,701,634	28,840,569
(\$/kW-month)	32.19	22.33	29.78	28.24

⁽¹⁾ From Tables 2 and 4 in Section VI - Projected Costs of the Projects

⁽²⁾ Approximately 60% Meldahl, 40% Greenup. In addition to the costs shown in this table, the Meldahl Participation Payment of \$4.86 million will be paid to Hamilton and recovered from the other Participants.

⁽³⁾ Net of interest earned on Debt Service Reserve Fund and Build America Bond interest rebates (Meldahl only).

Figure S-1
Comparison of Projected Meldahl-Greenup Hydroelectric
Projects Cost to Market Energy Price



MELDAHL/GREENUP HYDRO PROJECTS

- The AMP Board approved that Phase I hydro participants will be offered capacity in Phase II to meet their original Phase I capacity ordinance amount
- Project participation to be based on 60% Meldahl and 40% Greenup allocation
 - i.e. 10 MW allocation in the Phase II Hydro Projects = 6 MW Meldahl and 4 MW Greenup shares
- Additional redundancy is gained as a result of the output coming across multiple units
- Having a diversity of resources also helps capacity factor when maintenance is performed

KEY PROVISIONS IN POWER SALES CONTRACTS

- Separate Power Sales Contracts for Meldahl and Greenup
- Take or Pay Contracts (lowest cost financing)
- Participants will subscribe for **fixed shares** (in kW and %) of the output of the Projects
- Participants will receive their shares of Projects or backup and replacement power (**Contract Resources**) at the PJM/MISO transmission border at the same (“**postage stamp**”) rate
- Step Up Provision (106% - Meldahl and 25% - Greenup) (mitigate “weak link” analysis)
- Project Costs are O&M Expense of the Member
- Members pledge rates to cover costs
- A committee of Participants will have both decision making and advisory roles on Projects

PARTICIPANTS' COMMITTEE

- Participants choose members of Committee
- Members must include at least 60% (Meldahl) and 51% (Greenup) of Shares
- Minimum of 5 members on Committee
- Participants control Committee size
- Weighted voting according to % Share
- Meets not less than quarterly
- Elects Chair and Vice-Chair
- Chair appoints sub-committees

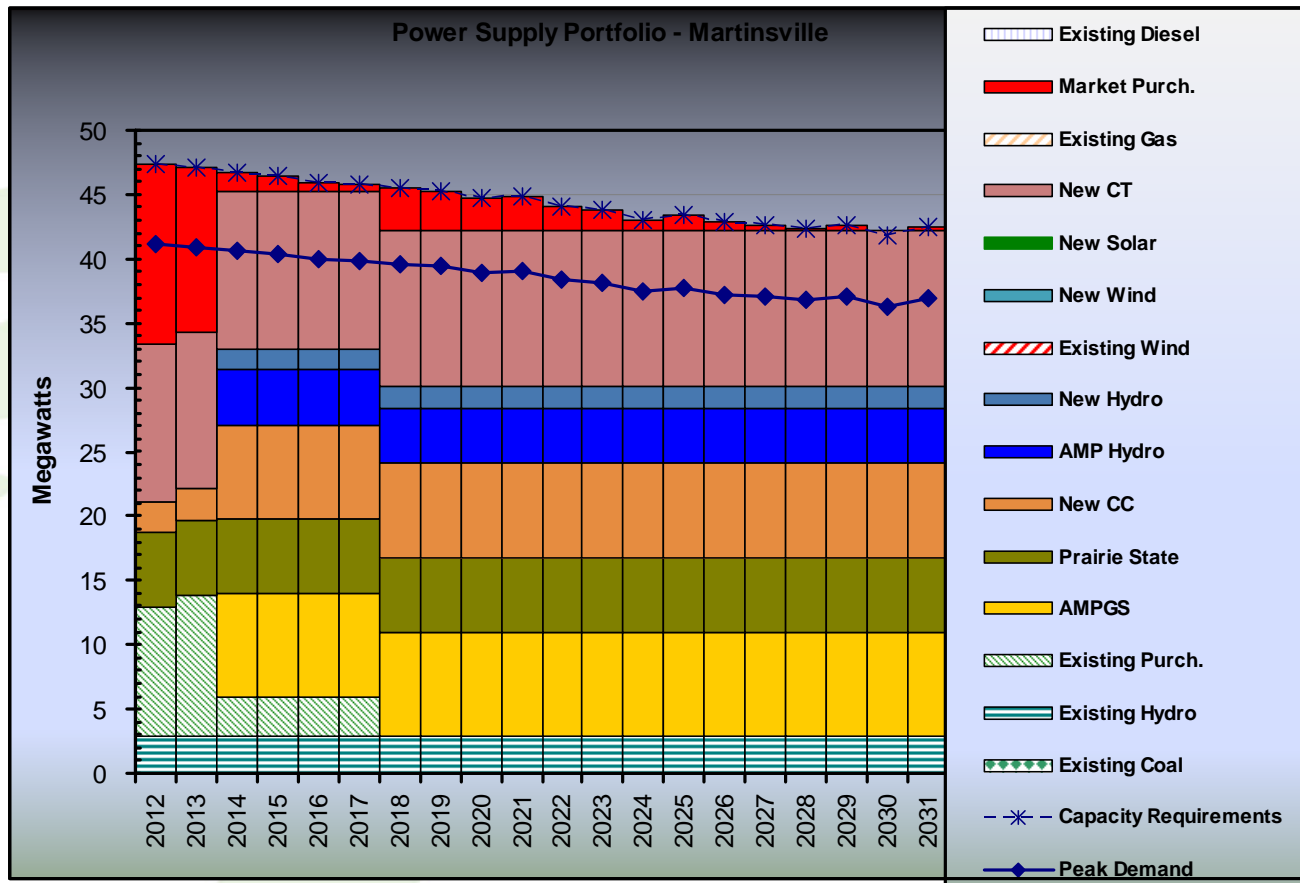
SUPER MAJORITY OF PARTICIPANTS

- 75% of all Project Shares (in kW)
- Approval required for:
 - Purchase of any Replacement Power prior to operation of the Projects
 - Any increase or decrease of 10+% in Project capacity
 - Any sale by AMP of any interest in Project
 - Any transfer by AMP of any interest in the Power Sales Contract
 - Termination of Power Sales Contract after Bonds paid

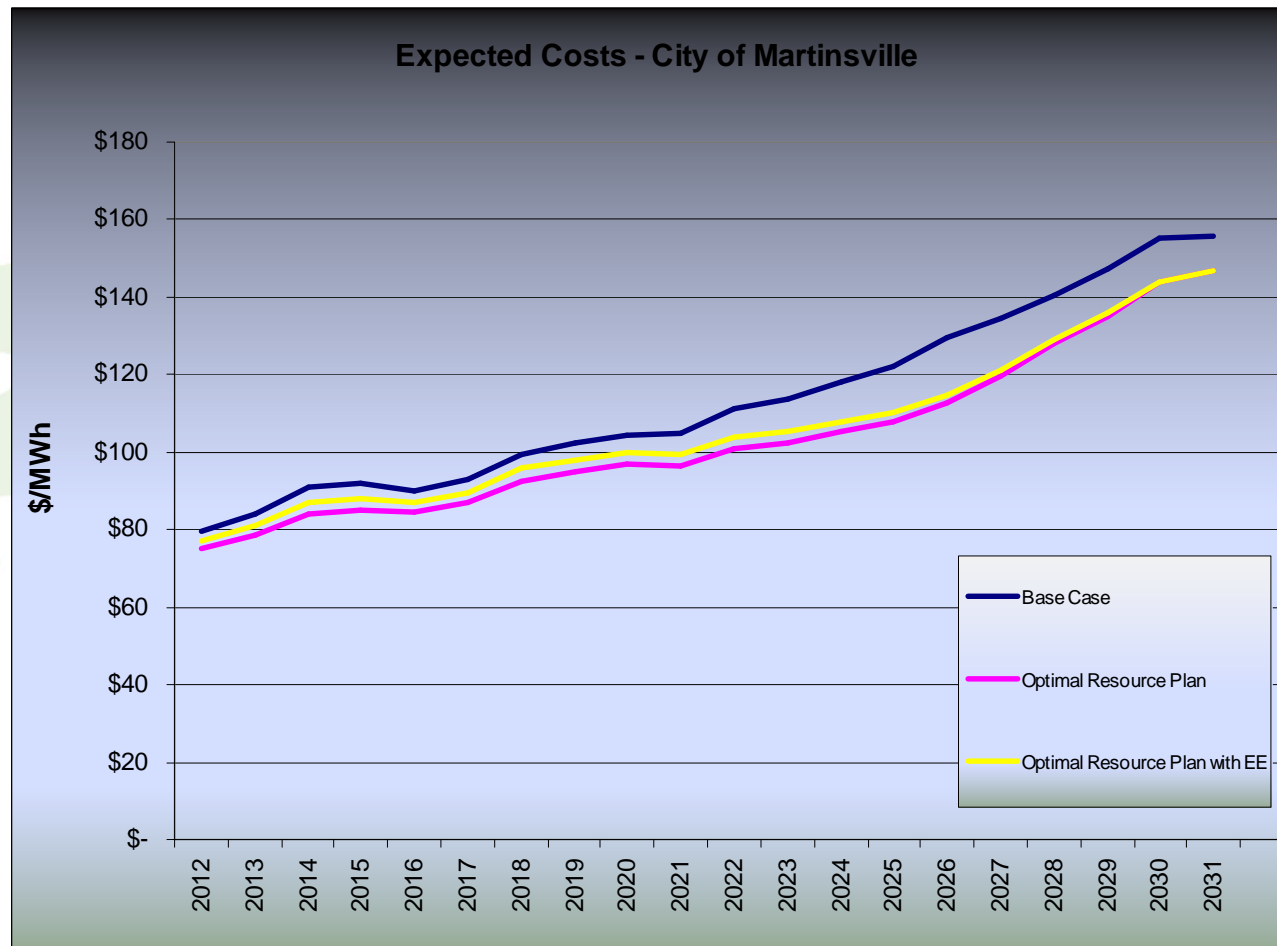
R.W. BECK LONG-TERM STUDY RESULTS

- Phase 1 Hydro Allocation currently 4,297 kW
- City of Martinsville's Optimal Power Supply Plan with Efficiency \$mart identified a need for:
 - Phase II Hydro Projects = 1,640 kW
 - Combined Cycle Project = 7,300 kW
 - Combustion Turbine Project = 12,200 kW
- AMP Recommendation for Phase II Hydro Projects = 1,640 kW

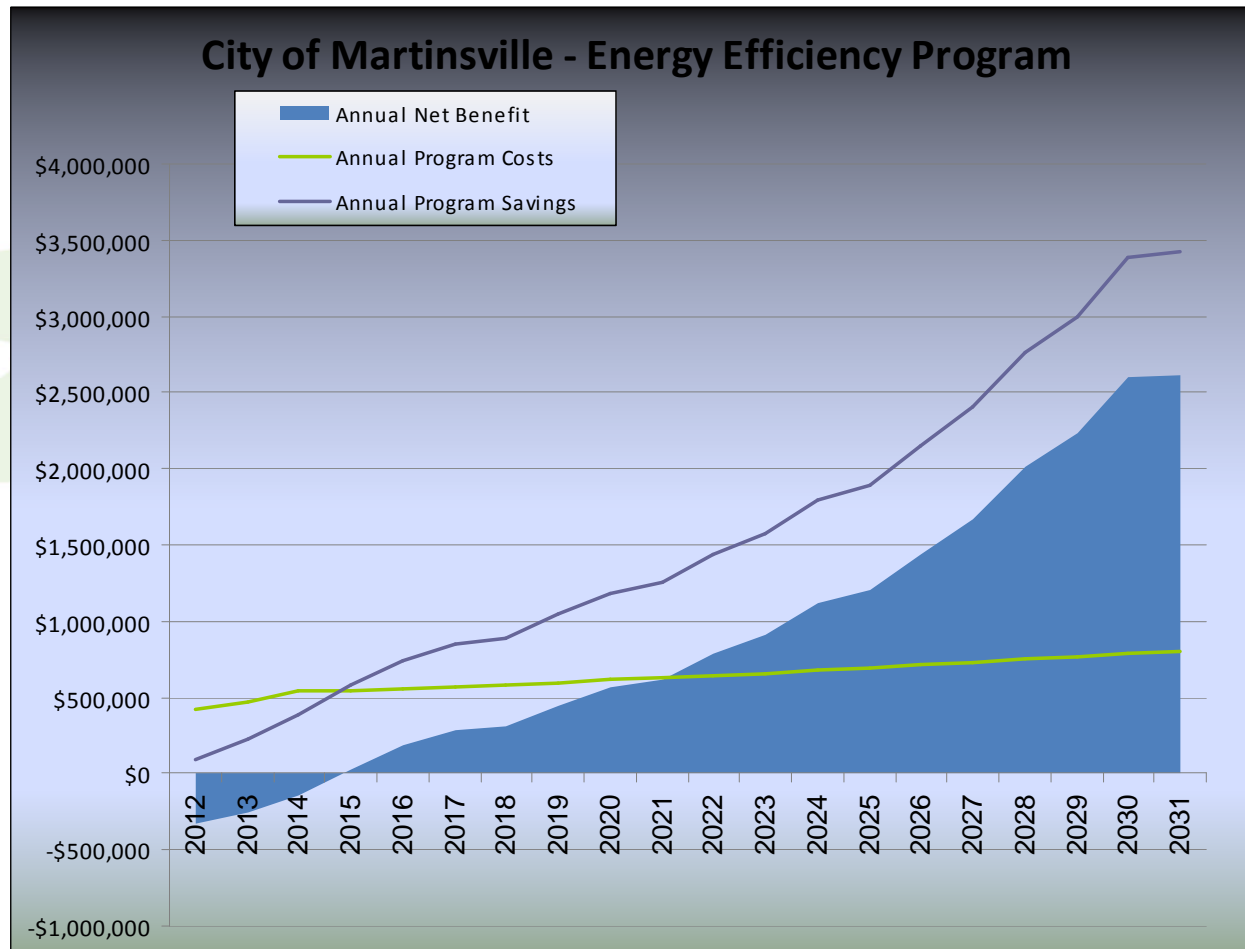
MARTINSVILLE OPTIMAL PLAN WITH EFFICIENCY \$SMART



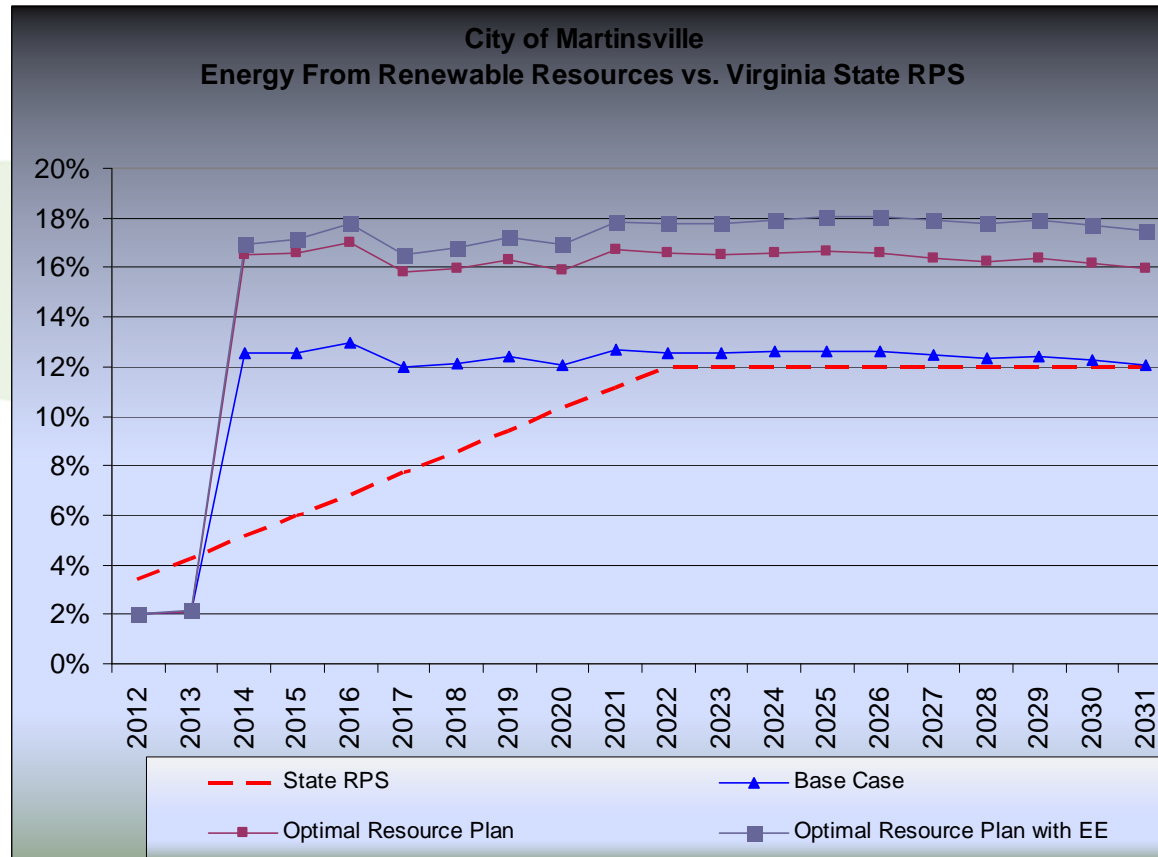
MARTINSVILLE EXPECTED COST



EFFICIENCY \$SMART PROGRAM



MARTINSVILLE RENEWABLE RESOURCES



SUMMARY

- AMP has thoroughly analyzed resource options and member needs, and determined these projects to be the best available options
- Economies of Scale and Tax-Exempt financing are major benefits for AMP members
- Participation in hydro projects diversifies power supply to help lower risk and cost

NEXT STEPS

- February 1, 2010 – Deadline for execution of Power Sales Contracts
- If over-subscribed – all prorated down on a equal basis, after all Phase 1 participants have received their shortfall amounts



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