NHsaves®
Your Source for Energy Efficiency

Technical Assistance Studies

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We look forward to hearing from you

Please put all your questions into the questions section with this icon.

Q&A

Agenda

1

What?

Overview of TA Studies and how the energy efficiency program can support customers

2

Why?

Demonstrate benefit to customers and business partners

3

How?

Outline the TA study process, and some best practices

What are TA studies?

- Detailed comprehensive studies covering one or more beyond-lighting custom measures
- Co-funded by customer and the Utility’s energy efficiency programs
- Requires detailed calculations and turnkey costs
- May include metering, data logging, trend data collection or other sources of data
- Baseline and proposed case validation
- Examples of measures

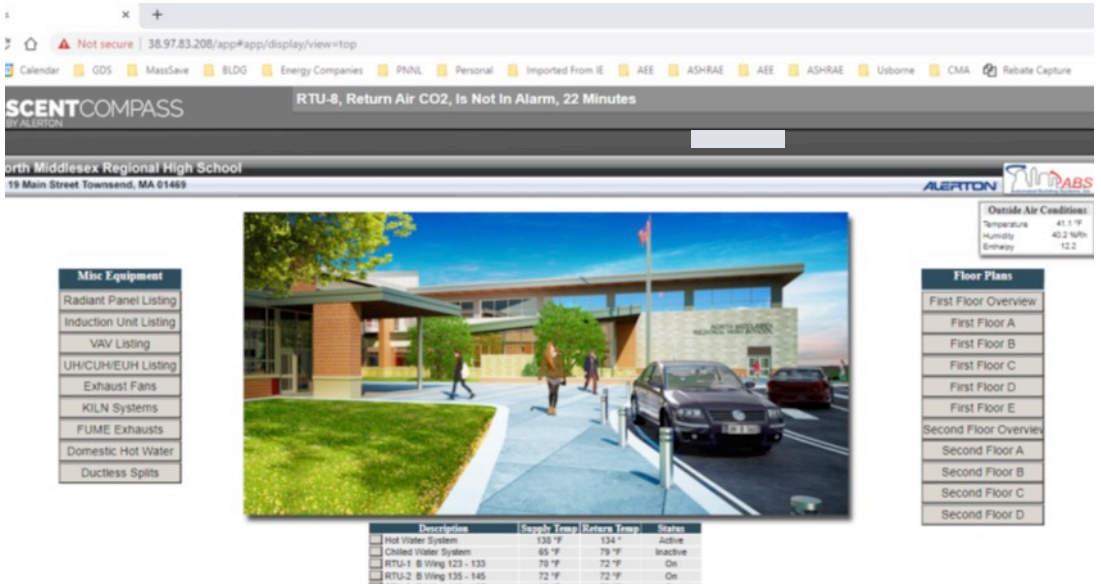
Boiler Plant Improvements

Hot Water Boilers

Steam Boilers

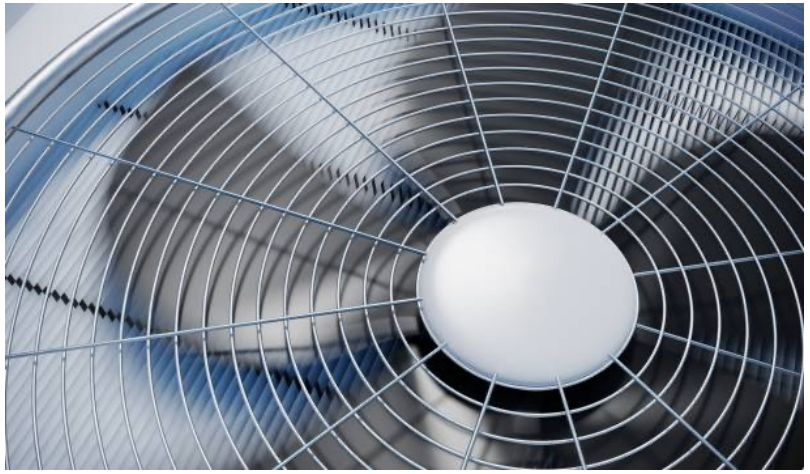
Chiller Plant Improvements

Energy Management Systems



Heating, Ventilating, and Air Conditioning (HVAC)

Not including boilers, chillers, and EMS



Building Envelope

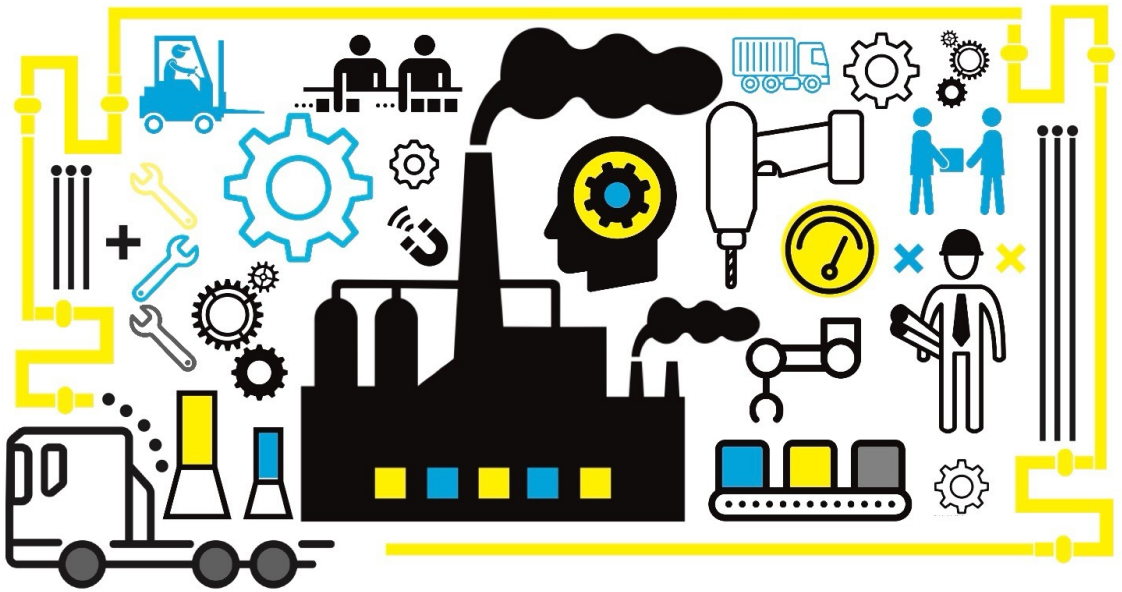
Chilled Water, Hot Water, and Steam Distribution Systems

Electric Motors and Drives

Refrigeration

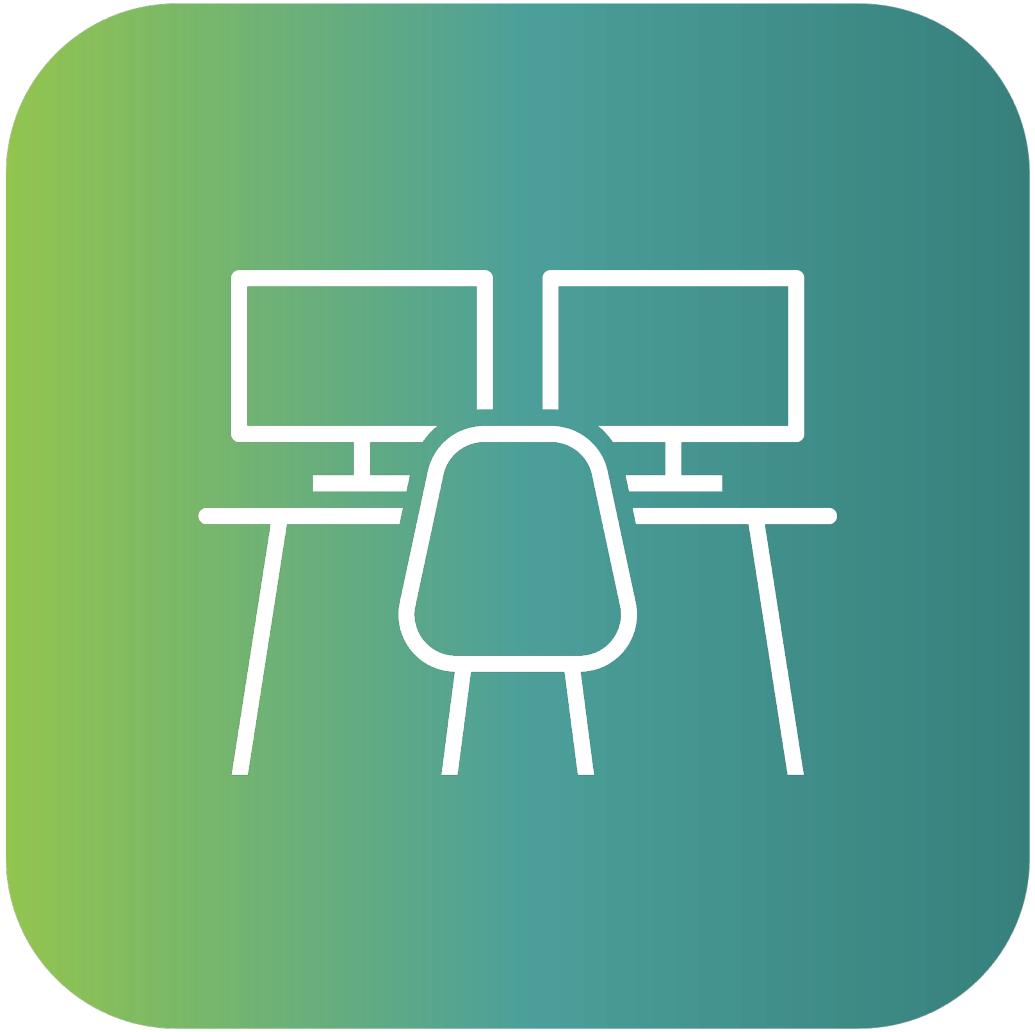
Distributed Generation

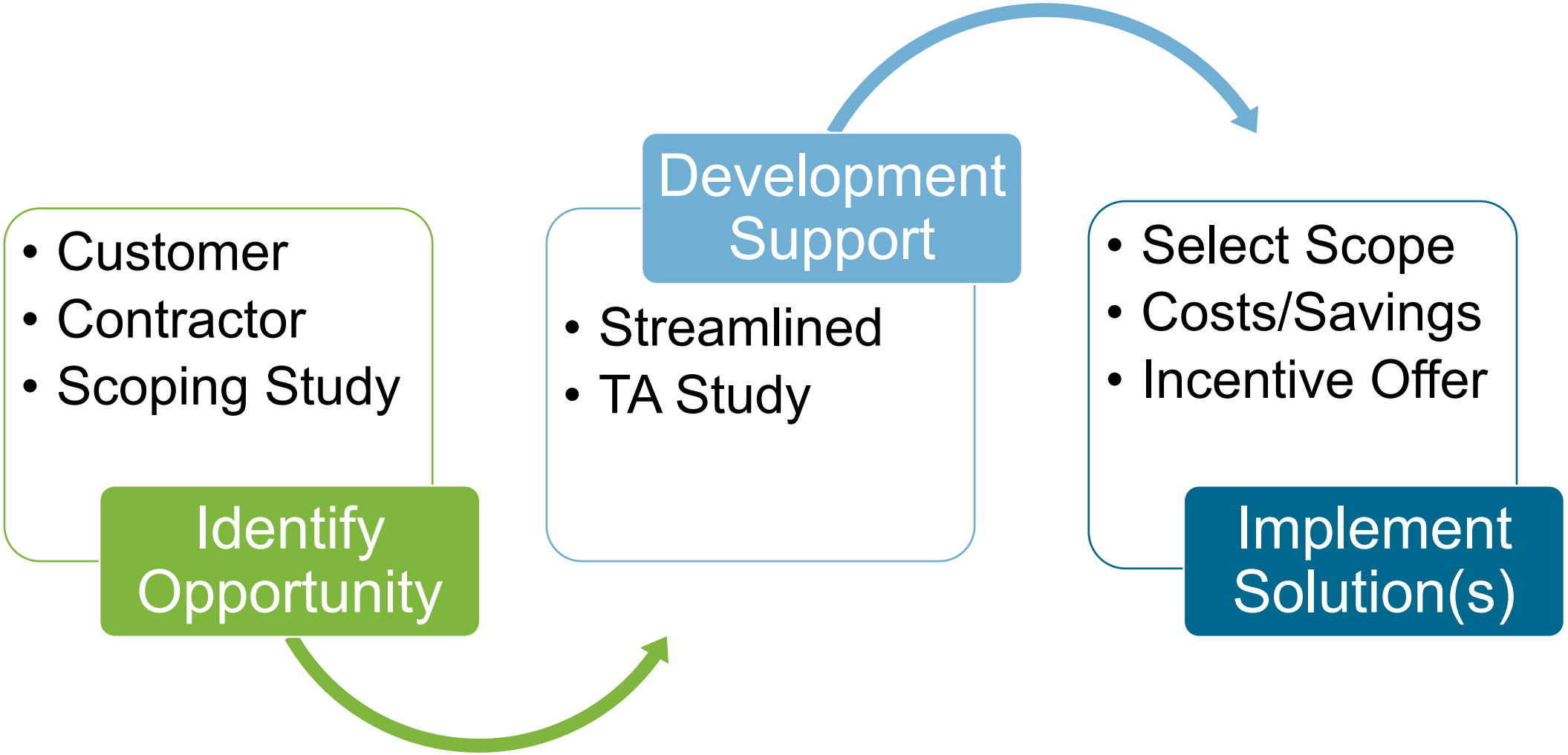
Energy-Related Process Improvements



Why complete a TA Study?

- Provide customer with technical support to define scope, cost and energy savings
- Develop multi-year capital projects plan with firm savings/costs/payback
- Require detailed energy savings analysis, metering and auditing to evaluate baseline and proposed cases
- Approval for energy efficiency incentive from the Utility
- Assist energy efficiency program achieve its savings goals
- Intended for large savings projects generally with a high cost



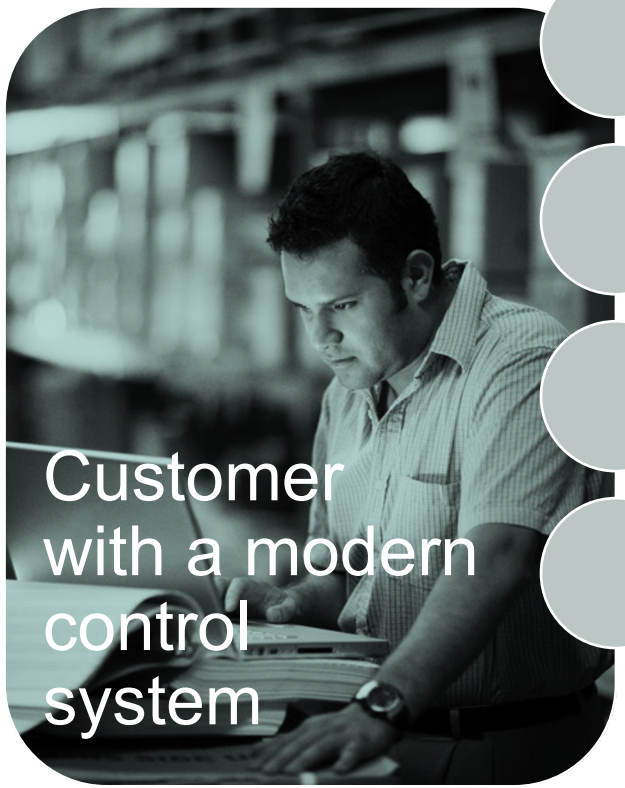


NHSaves Utility Partners Offers Support at Each Stage to Streamline the Process

How do we complete a TA Study?

- Submit application and proposal for pre-approval
- Contact your utility representative for list of preferred vendors. Customers may choose their own vendor with approval from the Utility.
- Initial introduction and kick-off meeting
- Site visit, and subsequent engineering work
- Identify comprehensive opportunities based on customer’s interest/capital

Retrocommissioning Project Example



- Pursuing lighting and refrigeration projects, looking for comprehensive energy savings
- 156,000 ft^2 full-service healthcare facility
- Air cooled chiller, biomass boilers, RTUs, kitchen, DHW
- Low hanging measures completed, energy management system and HVAC focus

Program Funded Scoping Study

Identify Efficiency Opportunities

Perform high level onsite walkthrough

Identify energy conservation measures (ECMs)

Discuss ECM opportunities with customer

Define project development next steps

Program Co-Funded TA Study

Project Development Support

Perform detailed energy audit

Partner with contractors/vendors to develop scope

Develop costs and savings for ECMs

Provide program documentation for incentive offer

TA Study RCx Sequences of Operation

Unit	1. SAT Reset	2. sP Reset	3. DCV	4. TU Optimization	4. Economizer	5. Pressure Ctrl	6. Sched. & Setback	7. Interlock EF/RTU	8. Optim. CHW Flow	9. CHW Reset	10. Prim. Pump Ctrl
RTUs	X	X	X	X	X						
HVACs	X			X							
ED	X			X							
OR								X			
Biomass											X
Chiller Plant									X	X	
Exhaust Fans						X	X				
VAVs and FCUs							X				

TA Study RCx Results

Included mix of short and long payback measures with both energy savings and operational benefits

ECM Name	Cost	Annual Electric Savings (kWh)	Annual Biomass Savings (Tons)	Incentive Offer	Annual Cost Savings	Simple Payback (years)
ECM-1: Retrocommissioning	$67,000	78,775	95	$23,450	$15,367	2.8
ECM-2: RTU Variable Flow	$22,000	37,169	0	$7,700	$4,460	3.2
ECM-3: RTU Unoccupied Operation	$6,500	2,894	2	$2,275	$487	8.7
ECM-4: Integrate Exhaust System	$7,800	2,033	78	$2,730	$5,098	1.0
ECM-5: Server Room Integration	$15,000	907	0	$5,250	$109	89.6
ECM-6: Server Room Free Cooling	$45,000	10,574	0	$15,750	$1,269	23.1
ECM-7: Boiler Plant Primary Pump Control	$3,000	542	0	$1,050	$65	30.0
Total	**$166,300**	**132,892**	**175**	**$58,205**	**$26,856**	**4.0**

Benefits of bundling long payback measures

How do we complete a TA Study?

- Deliver report, transparent analysis, equipment specifications, quotes, and minimum requirements document (MRD)
- Review and approval by utility representative
- Submit custom application for each measure customer is interested in implementing
- Issue incentive offer for each measure
- Complete work and incentive delivered (post inspection possible)

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Thanks for listening.

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