

# BPA Energy Efficiency Emerging Technologies Program Overview

## Emerging Technologies for Energy Efficiency

Sponsored by its Technology Innovation initiative, BPA's Energy Efficiency Emerging Technologies (E3T) team develops new business opportunities for regional conservation programs. Two efforts move us toward this objective. We seek to develop new methods for faster, cheaper, and better assessment of new products and services. We then use those methods to validate the performance and energy efficiency of commercially-available products and services. Technologies of interest may come from BPA's Technology Innovation initiative, or from a wide network of research partners.

### Focus Areas

- Variable-capacity heat pumps
- Heat pump water heaters
- Solid-state lighting and advanced controls
- Advanced rooftop HVAC units
- Industrial and agricultural innovation
- Faster, better, and cheaper methods for technology evaluation

R&D

Emerging  
Technologies

Program  
Implementation

Codes &  
Standards



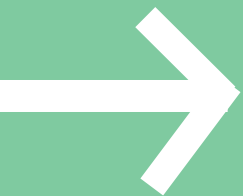
## R&D: BPA's Technology Innovation Office

BPA's research program enables breakthroughs, through operational improvements, increased efficiencies and avoided costs - all of which help maintain affordable and reliable power for the region. Since 2005, BPA's Technology Innovation Office (TI) has pioneered an approach that ensures the agency is making shrewd investments in technology research. BPA expects to ramp up its research and development budget to approximately \$18 million a year over the next several years.

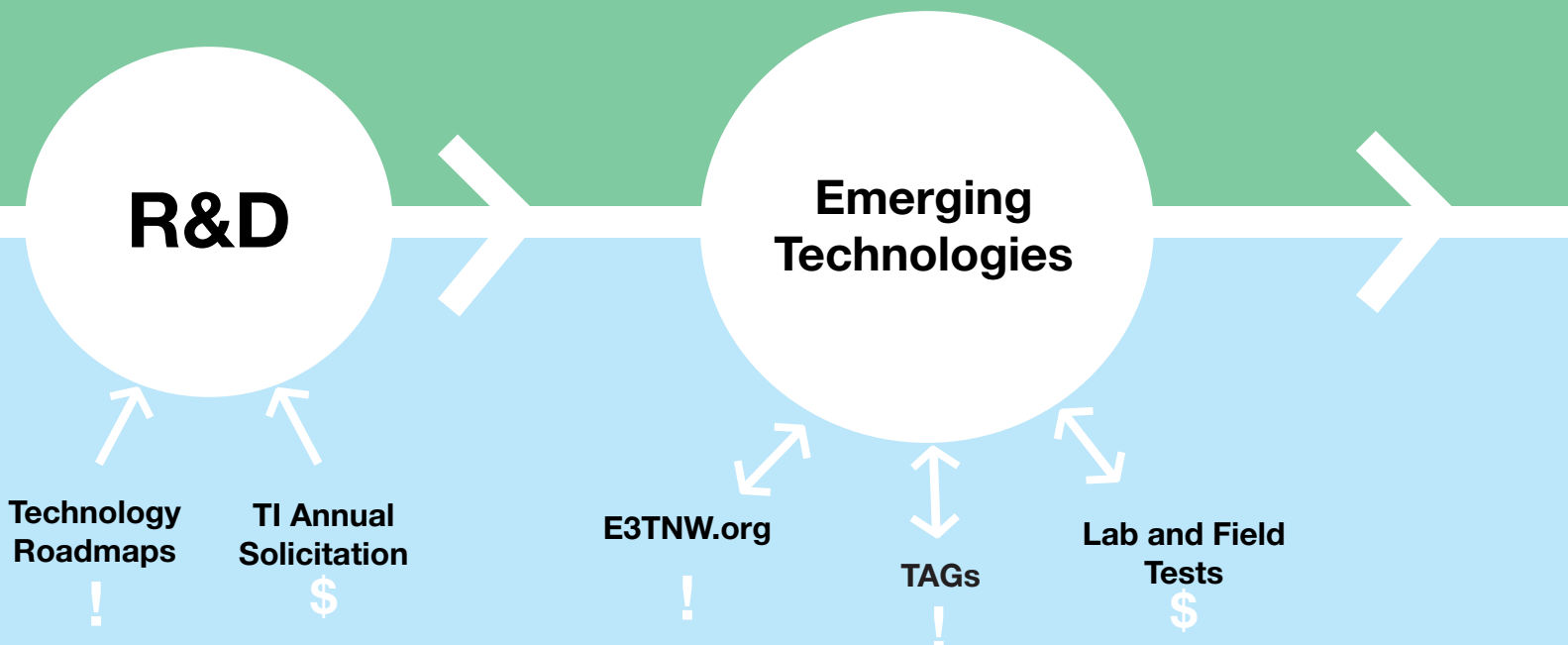
### ! The National Energy Efficiency Technology Roadmap Portfolio

BPA's technology innovation agenda is guided by a strict logic and framework that links the agency's research needs to current business challenges and technology gaps. This agenda makes extensive use of technology roadmaps to support the agency's strategic priorities, announced each March as part of an annual cycle of portfolio funding. The National Energy Efficiency Technology Roadmap Portfolio documents needed products and services that may require longer-term planning and investment to bring to the market, thus helping to "fill the pipeline" for the E3T team to evaluate and - with energy savings verified - transfer to utility programs teams for market diffusion.

### \$ Funding Opportunity – TI's Annual Research Solicitation



BPA has established an annual cycle of research and development funding for a national network of research partners. In March, BPA begins its solicitation of new projects for the following fiscal year (October to September). The annual solicitation will provide guidance to researchers toward the highest value capability gaps in the technology roadmaps. Technical review of proposals occurs in June and final project selection in July. Learn more about BPA's technology roadmaps and annual research solicitation cycle at [www.bpa.gov/ti](http://www.bpa.gov/ti).



# BPA's Emerging Technologies Program

Only those technologies with the most potential value will qualify for assessment by BPA's emerging technologies program. We then pursue a staged assessment, starting with low-cost research methods and moving toward those with greater precision. Stage gates in this assessment enable us to review results periodically and halt or accelerate development, as needed.

## ! E3TNW.org

In collaboration with Washington State University's Energy Program, E3T has launched an extensive database of information on emerging technologies with potential for conservation programs. With its searchable, user-friendly interface, this powerful and public tool allows users to browse more than 300 records and submit new technology ideas.

Browse the extensive library at <http://www.e3tnw.org>

## ! Technical Advisory Groups

Composed of subject-matter experts from across the Northwest, as well as selected experts from outside the region, BPA's Technical Advisory Groups identify, screen, and score energy-efficient technologies for further assessment by E3T. In recent years, BPA has convened advisory groups for residential and commercial buildings, and focused on individual technology areas, from smart thermostats to advanced lighting controls.

Reports, webinars, and other documents from BPA's technical advisory groups are available at <http://e3tnw.org/TAGPortal.aspx>

## \$ Collaboration Opportunity - Laboratory and Field Testing

Where gaps exist in knowledge, E3T may choose to fund research by external partners that advances our understanding. To answer research questions and gather performance data on selected technologies, E3T uses a wide range of research methods, with criteria such as low technology risk, significant regional energy savings potential, and movable barriers to delivery of cost-effective programs. Our assessment methods generally progress from secondary research to lab testing and limited field deployment.

Learn more about our collaboration opportunities at [www.bpa.gov/goto/e3t/](http://www.bpa.gov/goto/e3t/)



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For additional information, please visit [www.bpa.gov/goto/E3T](http://www.bpa.gov/goto/E3T)





## Join us

Collaboration and partnerships are cornerstones of E3T's work. BPA seeks and integrates the knowledge of public utilities, educational institutions, government agencies, non-profit organizations, and other stakeholders.

If you are interested in collaborating with E3T on future research endeavors including lab and field tests, please contact us on our website at [www.bpa.gov/goto/e3t/](http://www.bpa.gov/goto/e3t/)

Together, we can lead the charge in ensuring the economic and environmental future of the Pacific Northwest and beyond.