NASEO
National Association of State Energy Officials

Tool Overview

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About NASEO

The only national non-profit association for the governor-designated energy officials from each of the 56 states and territories

Serves as a resource for and about the State Energy Offices through topical committees, regional dialogues, and informational events that facilitate peer learning, best practice sharing, and consensus building

Advances the interests of the State and Territory Energy Offices before Congress and the Administration

Learn more at www.naseo.org

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Policy

Resilience

OpenBCA - Agenda

1. Tool Development: Background

2. OpenBCA Overview and Applications

3. Value Streams supported

5. Release Package and IT Requirements

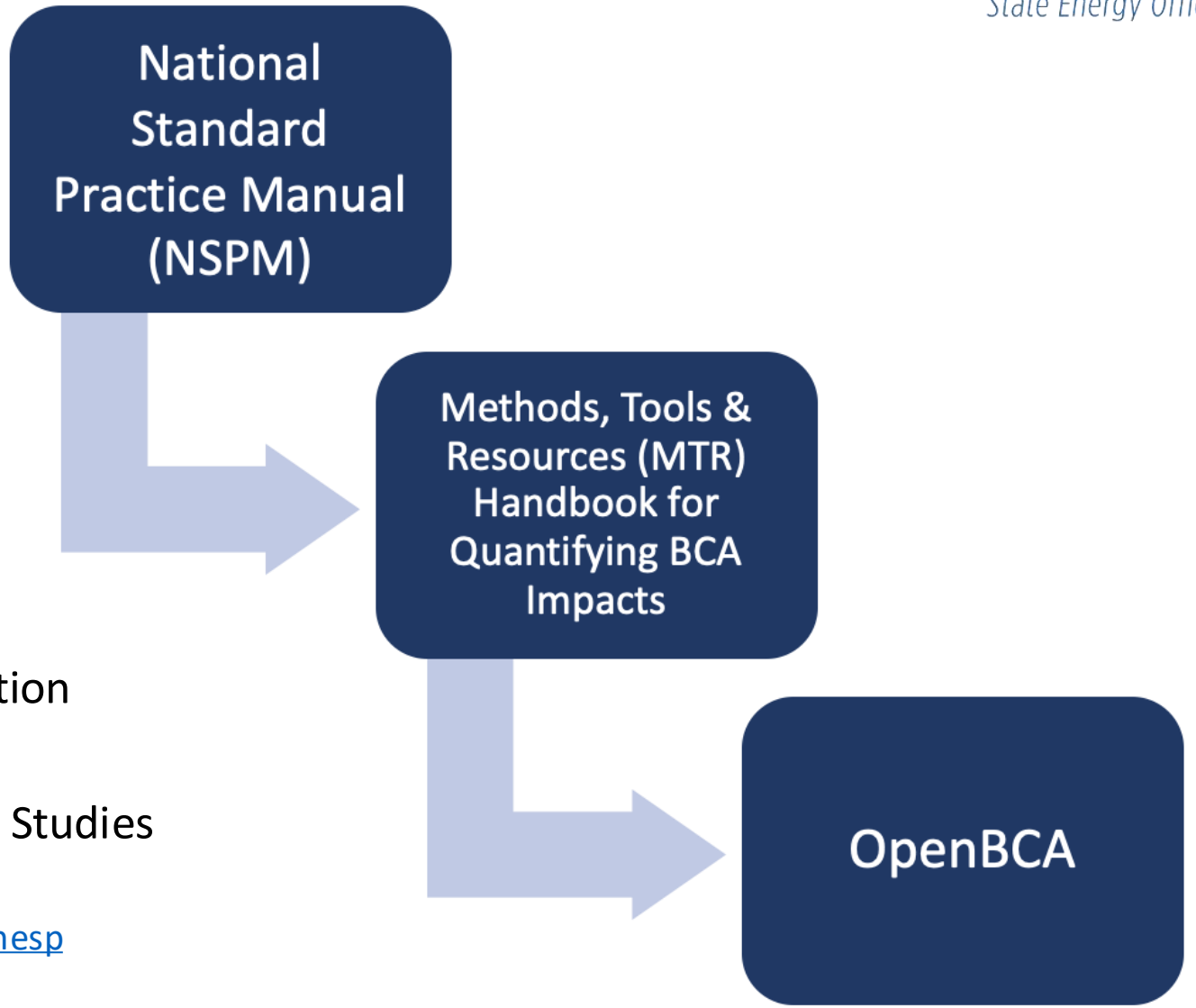
4. Live Demonstration

6. Q&A

NASEO's National Energy Screening Project

NASEO
National Association of State Energy Officials

nesp
NATIONAL ENERGY SCREENING PROJECT

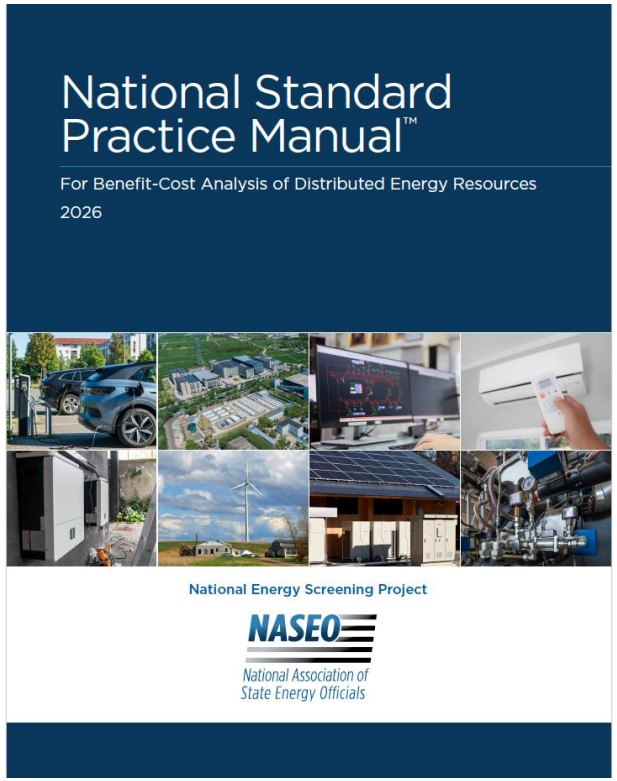


Supporting Services/Resources:

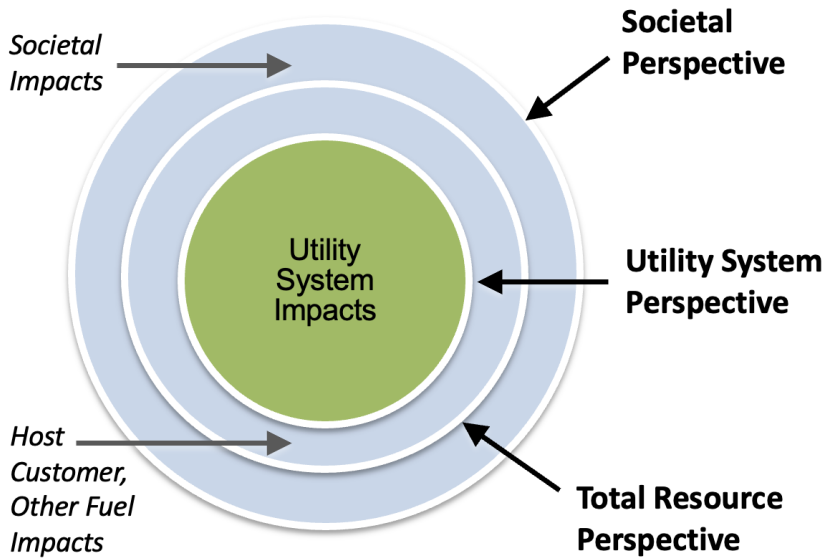
- State Technical Assistance and Facilitation
- NSPM Training and Certification
- DER Impacts – Research and BCA Case Studies

For more information, visit www.naseo.org/topics/nesp

NSPM Regulatory/Policy Perspective

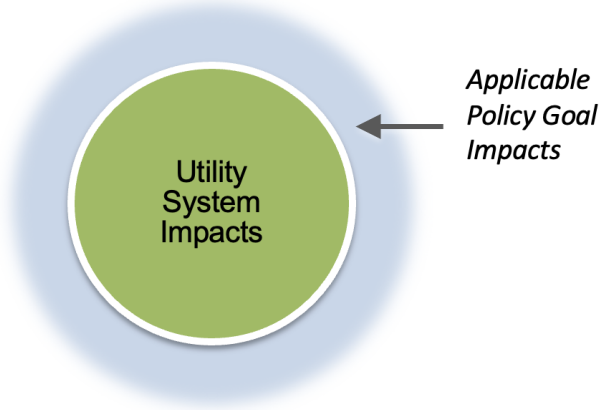


Traditional Perspectives



- Three perspectives define the scope of impacts to include in the most common traditional cost-effectiveness tests.
  - Utility Cost Test
  - Total Resource Cost Test
  - Societal Cost Test

Regulatory / Policy Perspective



- Perspective of Public Utility Commissions, State Energy Offices, legislators, muni/coop boards, public power authorities, other decision-makers.
- Accounts for utility system plus impacts relevant to a jurisdiction's applicable policy goals (which may or may not include host customer impacts).
- Can align with one of the traditional test perspectives, but not necessarily.
  - NSPM → Jurisdiction-Specific Test (JST)

OpenBCA: Funding and Team Roles

Strategic Guidance and State TA Coordination

- Tool Feedback
- Stakeholder engagement
- Strategic direction & planning
- State technical assistance

Open-Source on GitHub

Technical Design

- Value streams, methods
- User-friendly design
- Testing, validation
- Documentation

Tool was developed by ICF and Recurve, with support from the U.S. Department of Energy, Lawrence Berkeley National Laboratory, and E4TheFuture. NASEO supports OpenBCA by hosting the tool website, organizing technical support, and coordinating state technical assistance with LBNL.

Project Team Members

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Support from Michigan and LBNL Partners

OpenBCA is compatible with MI specific requirements

Extensive feedback on tool use cases and formulae set up

Improvements in user experience

Lead with example!

Beta Testers

- **Lawrence Berkeley National Laboratory**
- **DTE**
- **Consumers Energy**
- **Michigan PSC Staff**

OpenBCA

Accessible via NASEO website (along with supporting resources)

OR directly via [GitHub]

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Home > Our Work > Topics > National Energy Screening Project > OpenBCA

OpenBCA

NSPM-Based Benefit-Cost Analysis Model for Grid-Edge Resources

OpenBCA is a free, open-source desktop application that provides a transparent, standardized framework for evaluating the benefits and costs of grid-edge resources – often referred to as distributed energy resources (DERs). The tool – which is based on the National Standard Practice Manual (NSPM) - is intended for use by State Energy Offices, Public Utility Commissions, investor-owned electric and natural gas utilities, consumer-owned utilities, power authorities, DER program administrators and implementers, and other stakeholders involved in planning, evaluating, or designing DER programs.

OpenBCA was developed by ICF and Recurve, with support from the U.S. Department of Energy, Lawrence Berkeley National Laboratory (LBNL), and E4TheFuture. OpenBCA is copyrighted and licensed by LBNL (see Open-Source Information). OpenBCA is coordinated by NASEO's National Energy Screening Project (NESP), which hosts the OpenBCA webpage, organizes informational webinars, and coordinates state technical assistance with LBNL.

Access OpenBCA

OpenBCA lives on GitHub, an open-source, cloud-based platform. Click on the icon below to access and download the tool from GitHub:

OpenBCA

- Overview +
- Options for Using OpenBCA +
- Open-Source Information +
- User Guide and Supporting Resources +
- Frequently Asked Questions +
- Technical Assistance +
- IT Review and Requirements +

Why is OpenBCA needed?

Common BCA tools are often limited by:

Limited flexibility	Siloed DER analysis	Lack of transparency	Poor scalability
• Built for traditional cost tests (e.g., CA SPM) • Do not support NSPM-aligned jurisdiction-specific tests (JSTs)	• Often designed for single DER types (EE, storage, EVs) • Cannot evaluate integrated or stacked DER portfolios	• Proprietary “black box” models • Limited visibility into assumptions and methodologies	• Spreadsheet-based tools are slow and difficult to scale • Struggle with large datasets, multiple measures, and temporal/location

OpenBCA Overview

A transparent, open-source platform for evaluating the costs and benefits of distributed energy resources (DERs).

Open Source

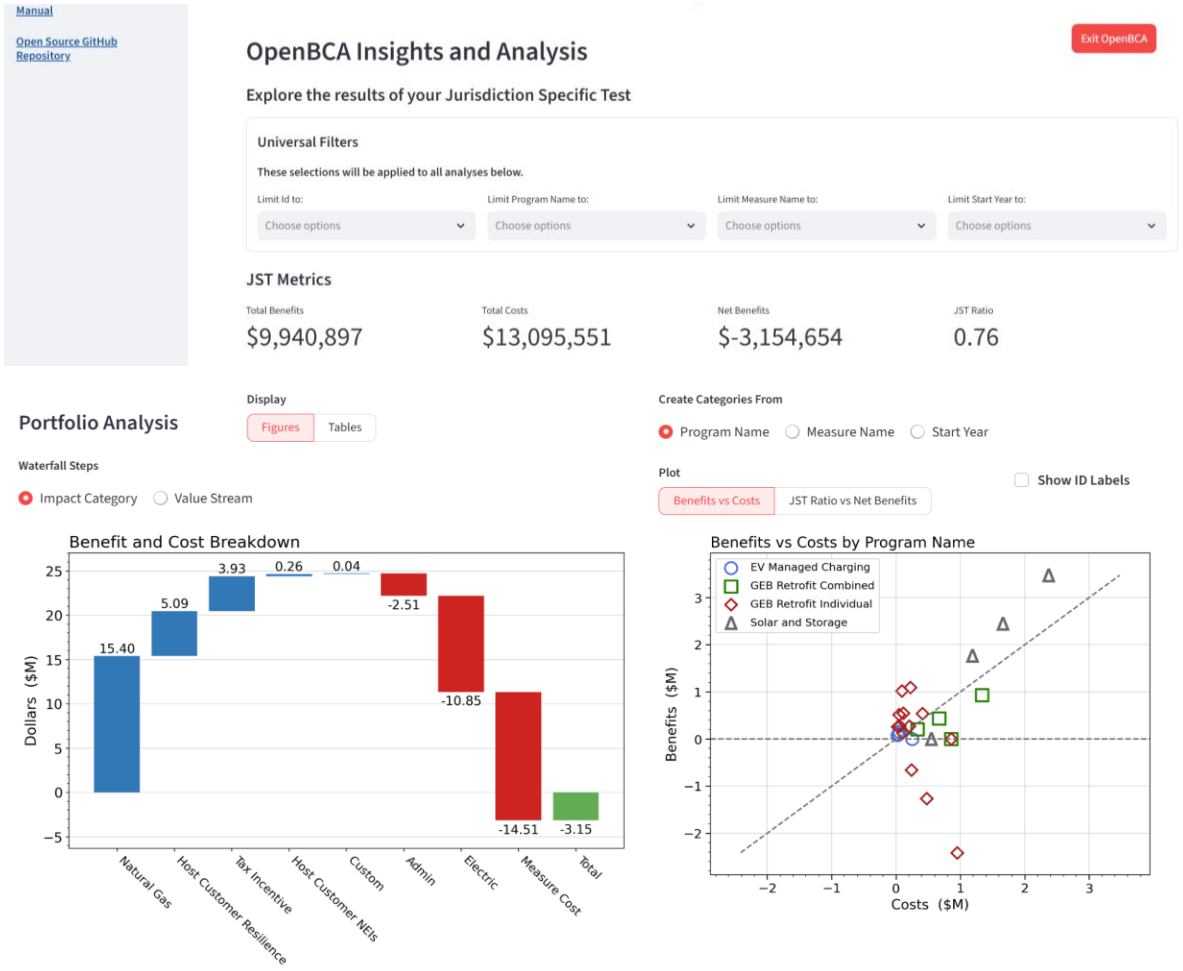
- Free Python/SQL-based platform
- Available on GitHub

Transparent

- Replaces proprietary "black box" models with NSPM-aligned analysis

Flexible

- Supports multiple DERs, JSTs, and traditional cost tests



What OpenBCA is designed to do

OpenBCA is best understood as a transparent BCA execution framework: it organizes, calculates, and reports DER cost-effectiveness results using user-defined policies, assumptions, and input data.

Is designed to…

- ✓ Use outputs from those tools in a transparent BCA framework
- ✓ Apply user-provided jurisdiction-specific inputs
- ✓ Configure tests based on state/regulatory priorities
- ✓ Make assumptions, methods, and results easier to inspect

Not designed to …

- ✗ Replace IRP, planning, or engineering tools
- ✗ Generate avoided costs or local assumptions
- ✗ Decide policy goals or JST structure
- ✗ Replace QA/QC, verification, or expert review

OpenBCA Supports Range of Analyses

Ranging from single measures to portfolio-level planning, while complementing existing tools...

Use Case	Core Functions
Multi-DERs Side by side analysis of multiple DERs	BCA for single or multiple DERs at measure, project, program, and portfolio levels
Non-Wires/Non-Pipes Solutions & Location-Specific Evaluations Defer/avoid infrastructure investment	Can use if costs align with capacity inputs ($/kW-year)
Distribution System Planning Grid modernization, infrastructure analysis	DSP models provide inputs; OpenBCA outputs can feed back iteratively

How OpenBCA can fit into your workflow

Establish JST Framework and Value Stream Data

Establish JST Based on Policy Requirements and NSPM Guidance

- Identify Value Streams
- Determine Cost Structure
  - Applicability of NTG and other factors
  - Treatment of transfer payments

Establish Raw Avoided Cost Data

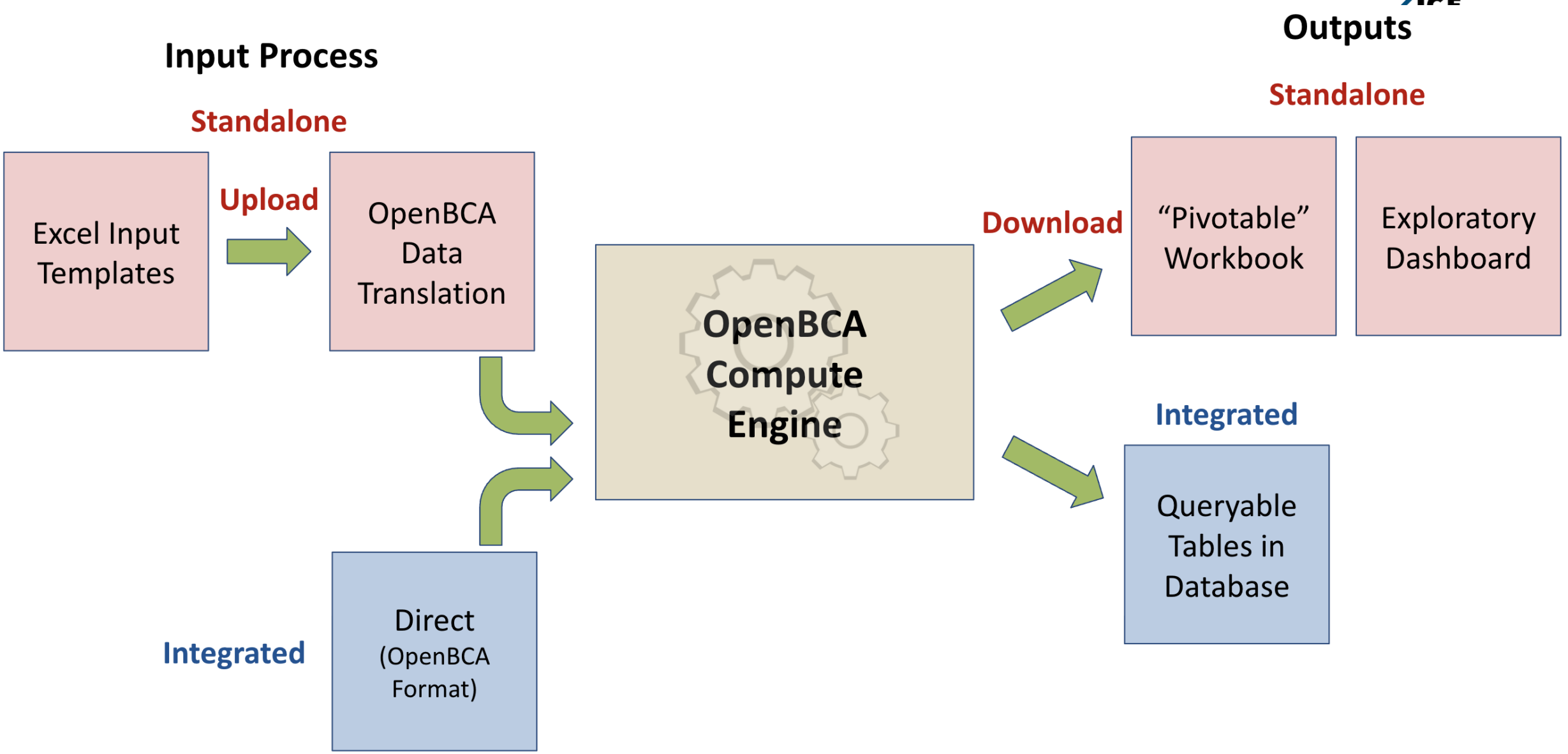
- Determine $/MWh or $/Therm or other inputs for time value streams
- Determine any multipliers/adders etc.

OpenBCA

Incorporate avoided costs into OpenBCA and configure JST

Execute JST via OS-BCA input template and UI

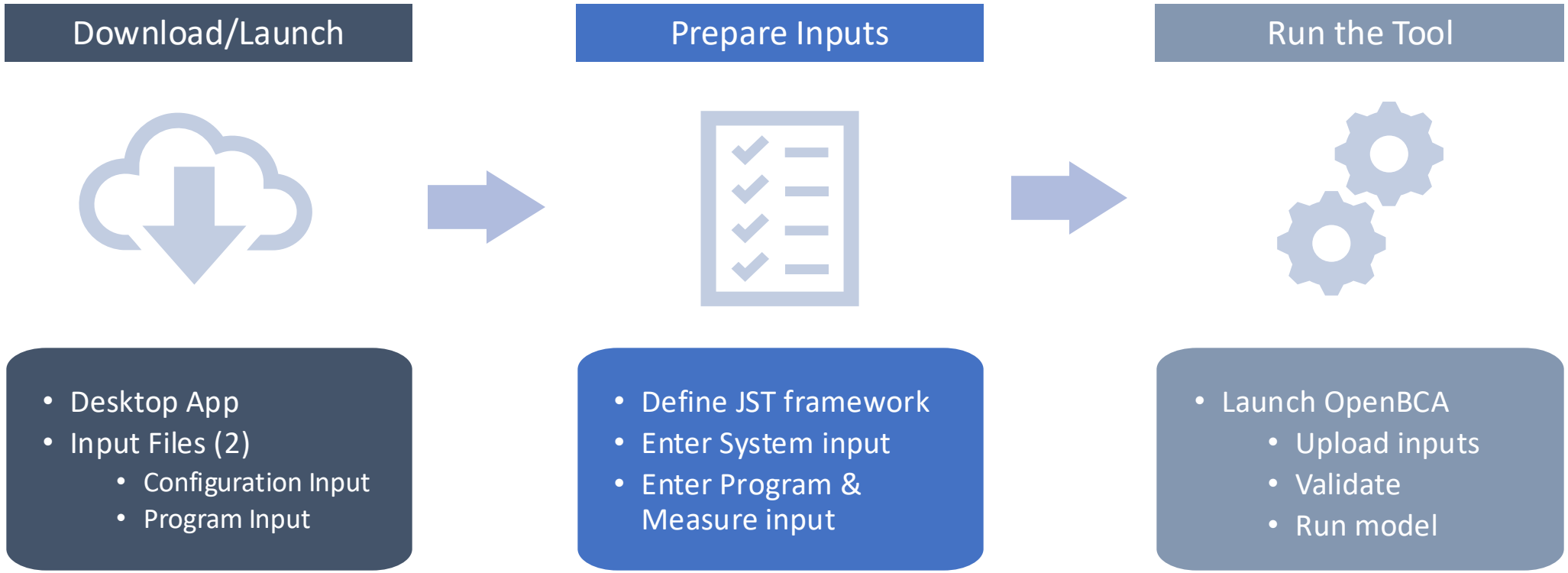
Standalone and Integrated Pathways



OpenBCA in Three Easy Steps

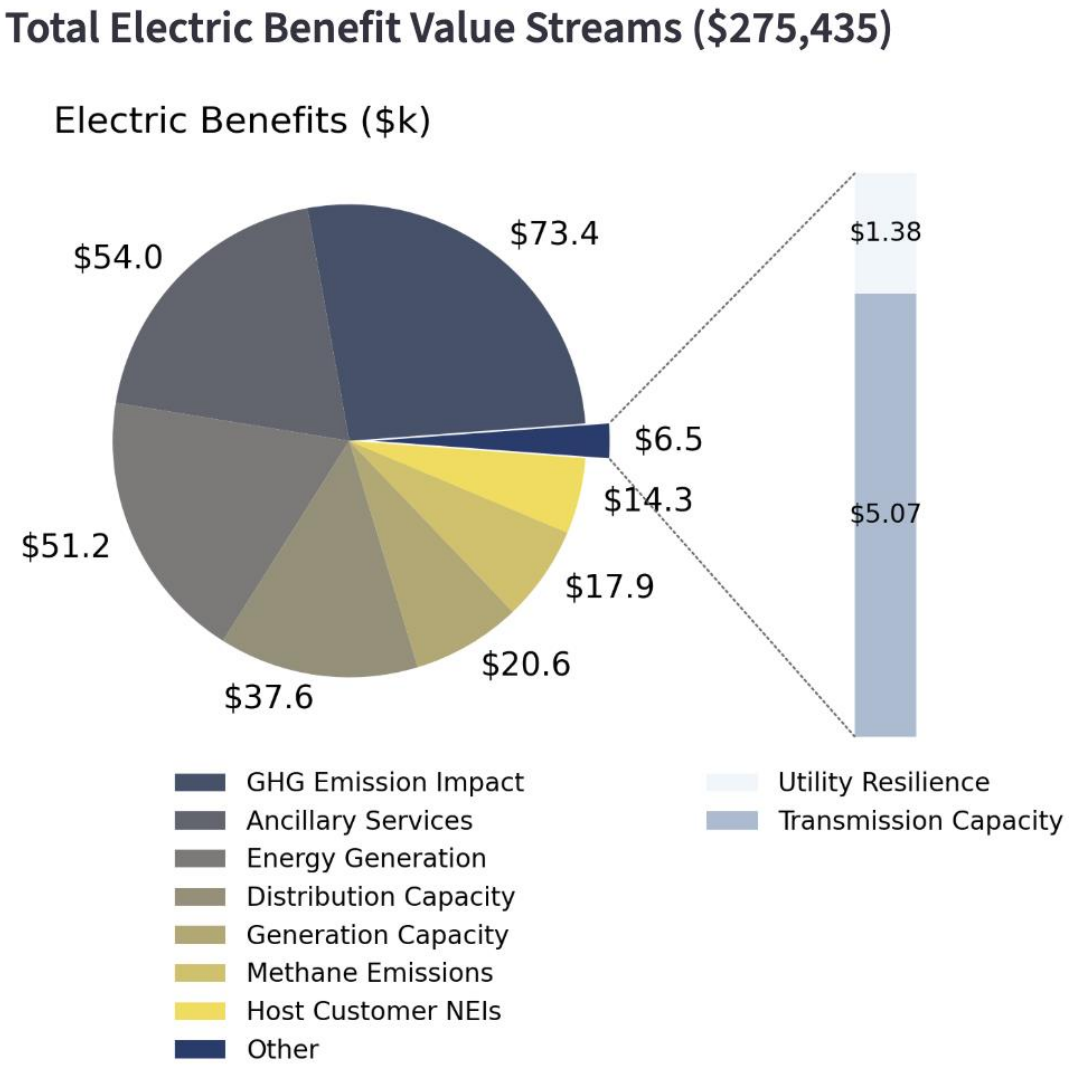
Designed for flexibility

- *Prepare inputs in Excel, run analyses in a desktop application, and export results for reporting*



OpenBCA Key Features

- Open-source (Python/SQL-based)
- Supports Jurisdiction-Specific Tests (JSTs) and traditional cost tests
- Handles multiple DER types
- Highly configurable
  - Custom value streams
  - Locational and/or customer subsets
  - Discounting and inflation
  - Adapts to granularity of available data
  - Adder value streams
- Captures temporal and locational impacts
- BCA methodology aligned with NSPM/MTR



Customizable, State-Specific JST Structure

Configure the JST around jurisdiction priorities

- Select value streams, assumptions, inputs, and avoided cost streams that reflect state policy goals

Define custom value streams

- Add or define benefits and costs that are relevant to the analysis, including impacts not covered by standard categories

Test Set Up:	
Value Stream	**Include in Test**
Energy Generation (E)	Yes
Generation Capacity (E)	Yes
Transmission Capacity (E)	Yes
Distribution Capacity (E)	Yes
Environmental Compliance (E)	No
RPS Compliance (E)	Yes

Value Streams supported in OpenBCA

- General Utility System
- Electric Utility System
- Natural Gas Utility System
- Societal Impact
- Host Customer Impact
- Other Fuels Impact
- Custom Impact

Impacts align with NSPM range of utility and non-utility system impacts for users to define the primary jurisdiction specific test (JST) -- and any secondary tests – with flexibility to add 'custom' impacts.

OpenBCA Release Package

User Guide

- Describes OpenBCA methodology, alignment with the NSPM, and guidance on appropriate use of the tool

Technical ReadMe

- Provides technical details for deployment and execution
- Hosted on GitHub and suitable for sharing with IT teams for tool review and approval

Technical Assistance (Service)

- Office hours
- State technical assistance available

Step by Step Instruction (PPT)

- Walks users through downloading, setting up, and running OpenBCA using annotated screenshots

Value Stream Summary (PPT)

- Documents the definition, equation, and treatment of each value stream included in OpenBCA

System Admin & IT Requirements

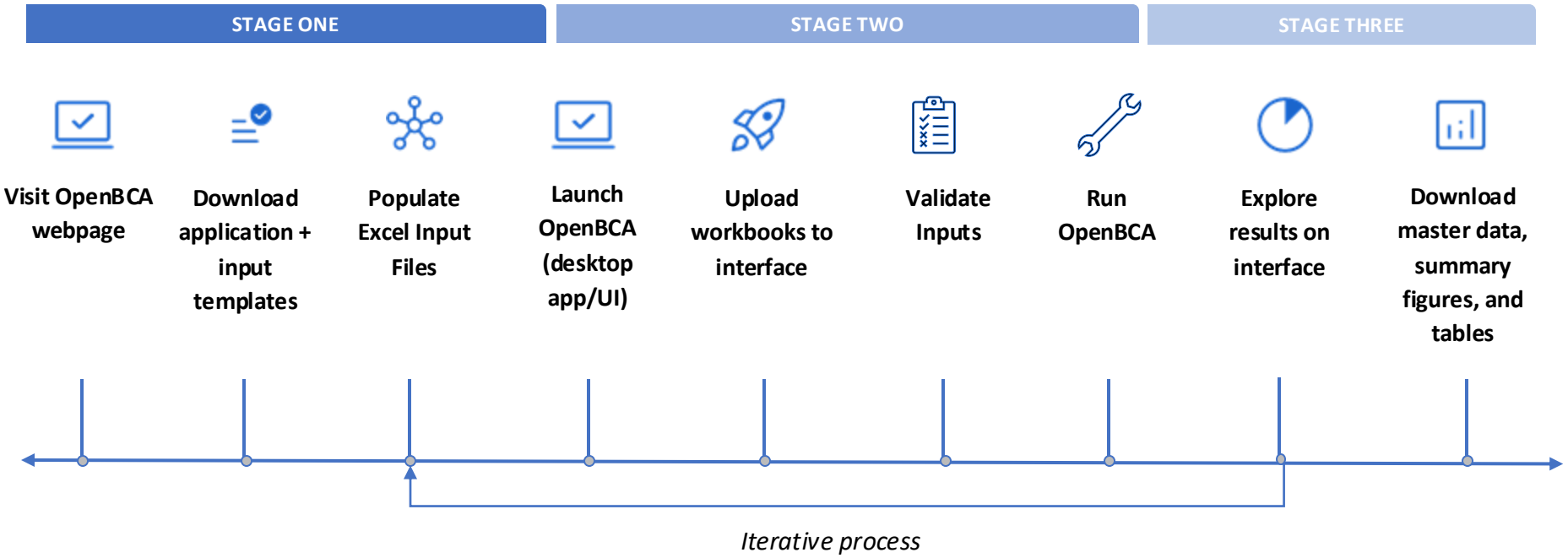
OpenBCA is a large software made up of large spreadsheets and technical code.

OpenBCA may require additional IT permissions to address firewall restrictions, application downloads, or local security settings.

Every IT team has unique requirements; the project team is available to help troubleshoot setup or access issues.

State technical assistance is available to support OpenBCA setup and configuration

User Flow


STAGE ONE
STAGE TWO
STAGE THREE
Visit OpenBCA webpage
Download application + input templates
Populate Excel Input Files
Launch OpenBCA (desktop app/UI)
Upload workbooks to interface
Validate Inputs
Run OpenBCA
Explore results on interface
Download master data, summary figures, and tables
Iterative process

Example Portfolio

Programs	DER Types	Regions
Cool Home Comfort	Efficiency	Subsets
Heat Pump HVAC	Building Electrification	• North Bramble
Sun Charge	Battery S	• South Junction
Small Business Solutions	Load Shifting/DR	
Efficient Kits	Hybrid Efficiency/Water	

Live Demo

Thank You

Please visit NASEO's OpenBCA website for FAQs and more information. A recording of the webinar will be available here.

Office Hours: 1st and 3rd Thursdays, 2:00 PM – 3:00 PM ET. Register here.

You can also email openbca@naseo.org with additional questions.