

# The what and why of technology transfer

Redefining success to meet today's challenges

**Luke Beckett**

Product Manager,  
Customer Energy Solutions

**Bryan Jungers**

Senior Research Manager,  
Customer Energy Solutions

Web conference



**E Source**

# Agenda

- A brief history
- Late to the party?
- How technologies evolve
- Real talk on emerging tech
- Let the best ideas win
- From next to best

A person is seen from behind, sitting at a desk and using a laptop. The laptop screen displays a social media profile page with a profile picture, a 'My Status' section, and a list of posts. The text 'A brief history' is overlaid in large white font on a semi-transparent blue rectangular box in the center of the image.

# A brief history



E Source

Headquartered  
in Boulder, Colorado



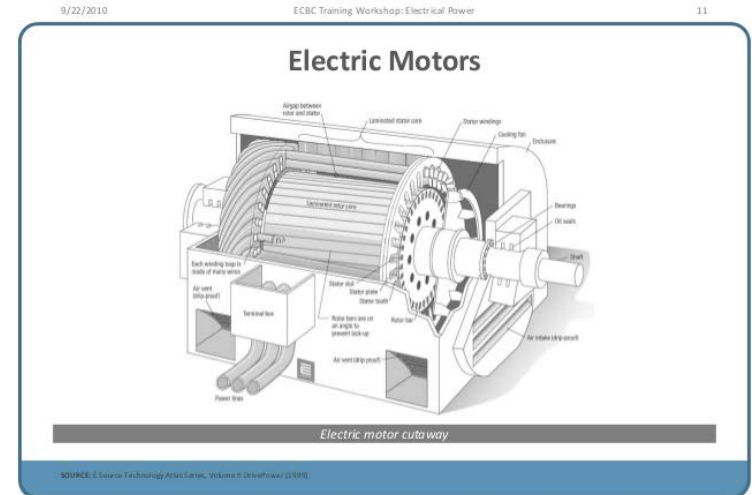
EST.  
1986



# Quick math: 34 years working on tech transfer



© E Source



A person is shown from behind, sitting at a desk and using a laptop. The laptop screen displays a social media profile page with a profile picture, a status update, and a list of navigation options. The entire scene is overlaid with a semi-transparent blue filter. A white rectangular border frames the central text.

# Late to the party?

A woman with short blonde hair and glasses, wearing a white sweater over a collared shirt and dark pants, sits on a red sofa. She is looking down at her phone. In front of her is a round white table with several wine glasses and a plate of food. The background is a blurred restaurant interior with a potted plant.

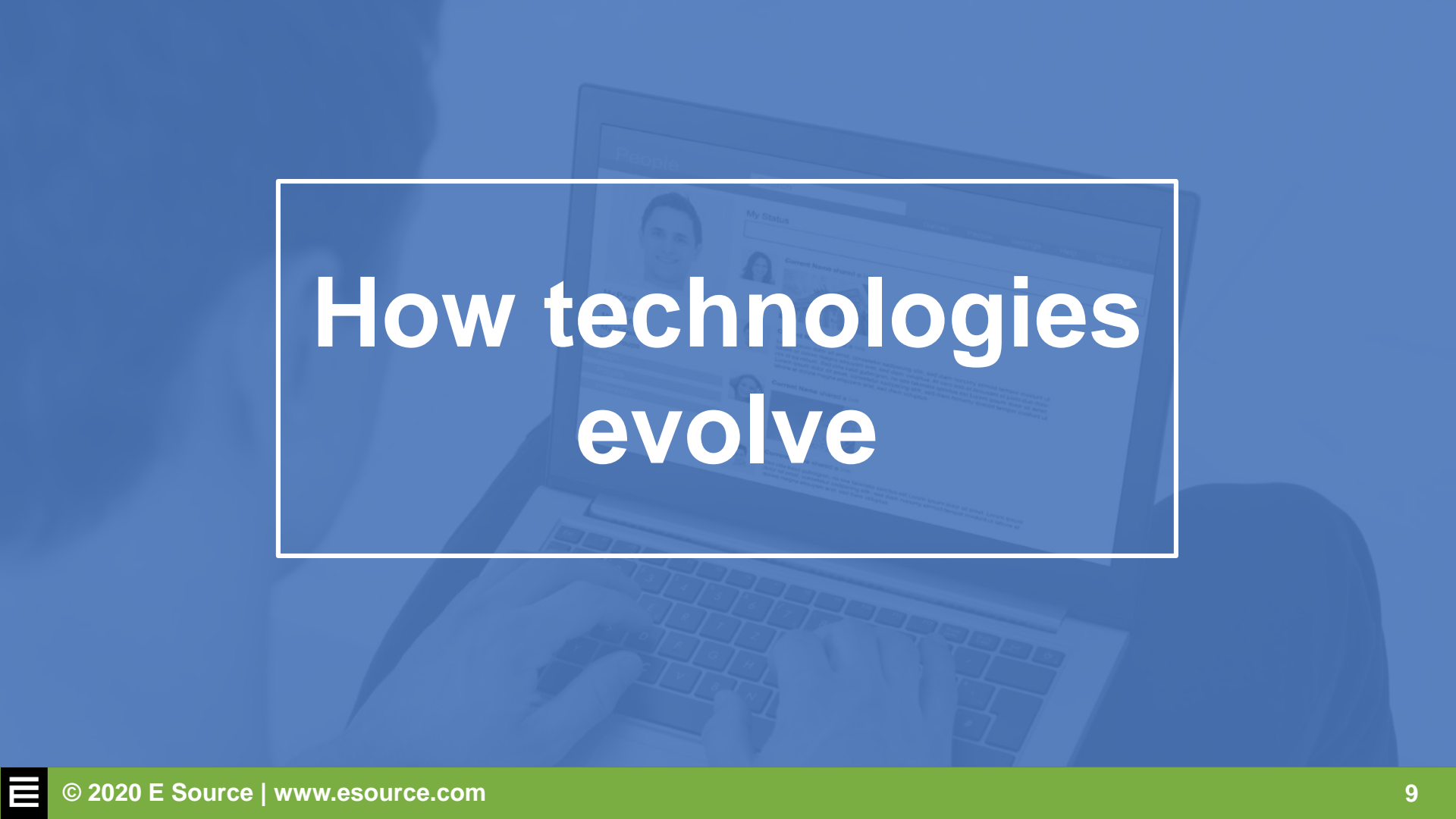
**Are you late  
to the party?  
Are we all?**

# The “cult of newness”

- “ Do you have performance data for the latest and greatest HVAC technologies?
- “ What’s the current residential demand for new tech?
- “ Can you provide a list of the leading EV charging and load-management technologies?
- “ What new technologies are being tested in the latest field pilots?
- “ Can you update the tech review you did for us last year?







# How technologies evolve

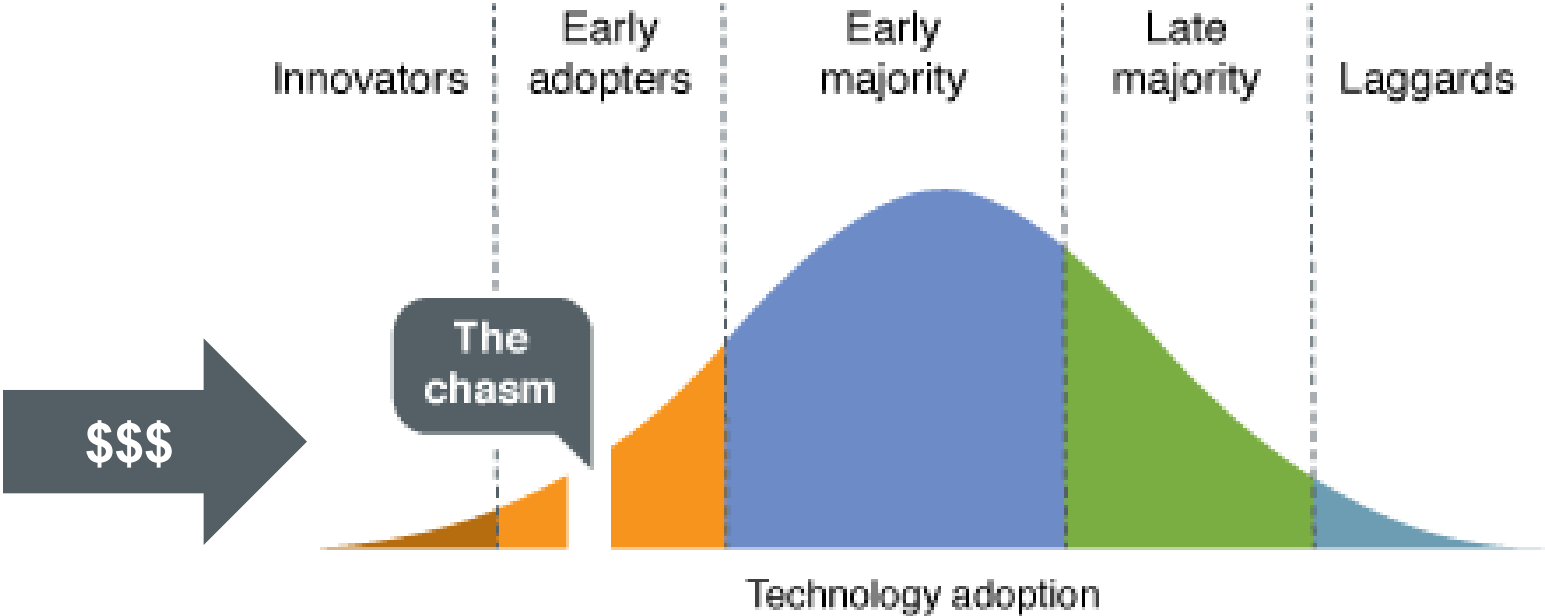
# It's easy to oversimplify tech evolution



Source: iStock



# Or reduce everything to “the market”

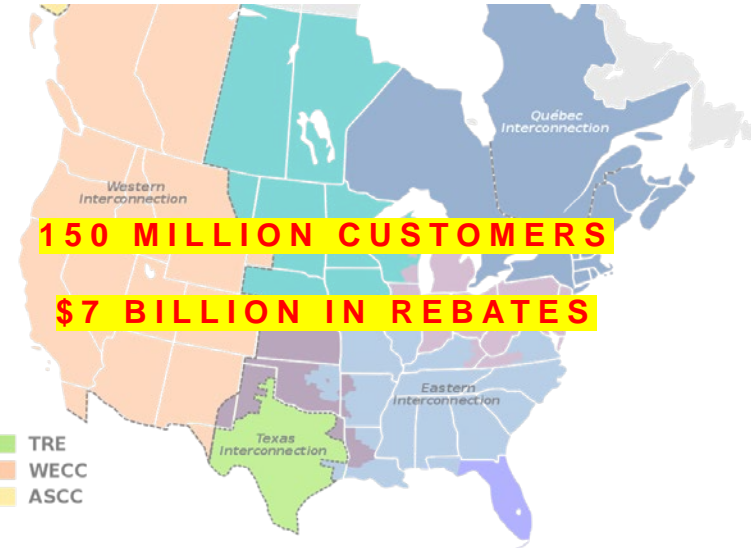


© E Source

# Technology development is expensive

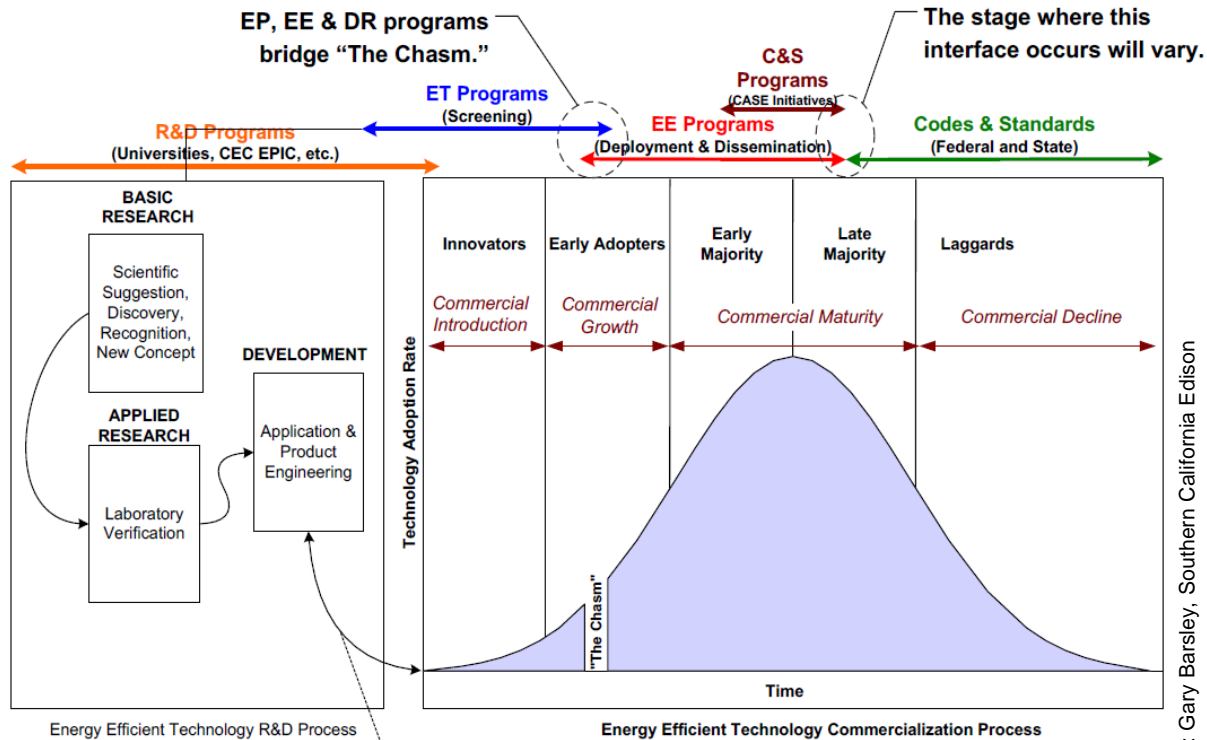
**\$112 billion**

**\$4 billion**



Source: Brian Barnacle, Energy Solutions

# In practice, tech transfer is complex!

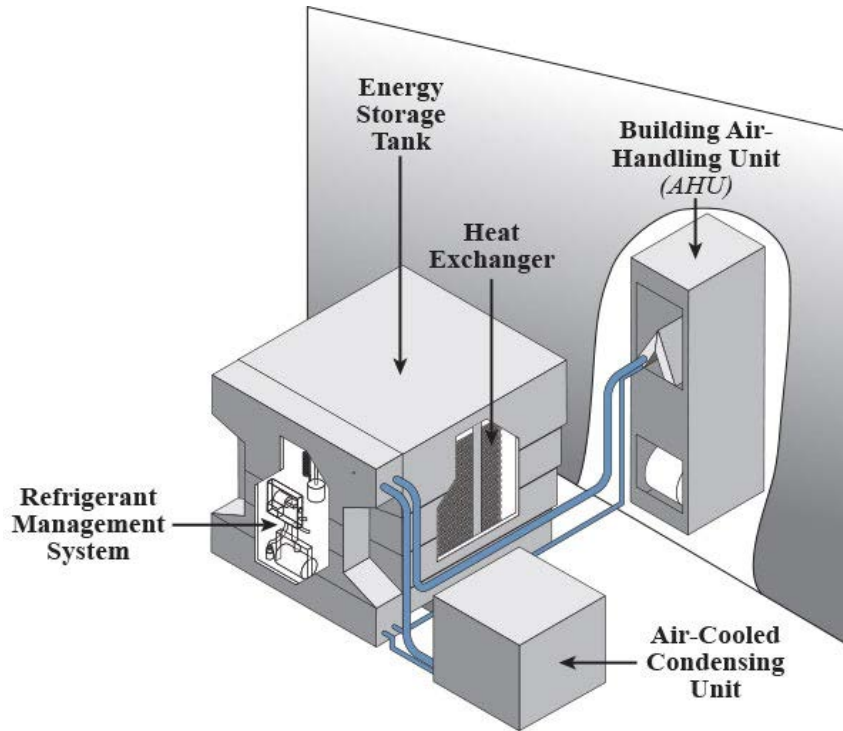


New technologies and applications may cycle between Product Engineering and Commercial Introduction several times until the correct mix of features, performance, price, availability, etc. are reached. Degree of failures and risk are high.

Source: Gary Barsley, Southern California Edison

***“Degree of failures and risk are high.”***

# Example 1: The Ice Bear



Source: U.S. Department of Energy

## Timeline

**1970s:** Original research and development

**2005:** Ice Energy commercializes

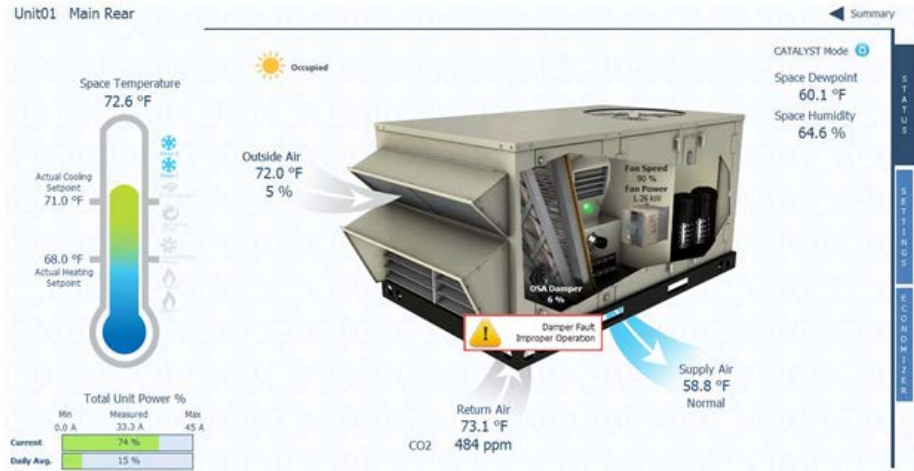
**2019:**

- Southern California Edison deploys 100 units
- E Source identifies it as a top tech
- Ice Energy files for bankruptcy

**2003:** Powell Energy develops

**2007:** Redding Electric Utility successfully pilots

# Example 2: The Catalyst



Source: Transformative Wave; [Rooftop unit retrofit controls mature](#), E Source (2016)

## Timeline

**2010:**  
Transformative  
Wave founded

**2013:** E Source  
gives it game-  
changer award

**2018:** DOE  
names it  
Advanced RTU  
Campaign  
award winner

**2020:** Appears to still be going strong

**2011:**  
E Source first  
writes about  
the Catalyst

**2016:** Emerson  
invests

**2019:** Energy  
Manager Today  
names it Top  
Product of the Year



# Real talk on emerging tech



# Luke and Bryan discuss emerging tech



A person is seen from behind, sitting at a desk and using a laptop. The laptop screen displays a social media profile page with a header 'People', a profile picture, and a 'My Status' section. The text 'Let the best ideas win' is overlaid in a white box on the screen. The background is a solid blue color.

**Let the best  
ideas win**

**Adopting a “best idea wins” mindset**

**COMEDY!**



To get the best ideas,  
you need to listen



# Case study 1: Duke Energy's intranet

## Duke Energy Intranet

- Focus on community and collaboration
- Features guest bloggers throughout the company
- Encourages employees to suggest home page content
- Employees can submit calendar items and news



Source: Duke Energy

# Case study 2: SCE's IDEAs portal



SCE IDEAs

[Submit your idea](#)

[Letter Requests](#)

[Focus Areas](#)

[About Us](#)

[FAQ](#)



**Share your ideas** for increasing energy reliability, improving the environment, enhancing service performance, reducing wildfire threats, and improving safety throughout Southern California.

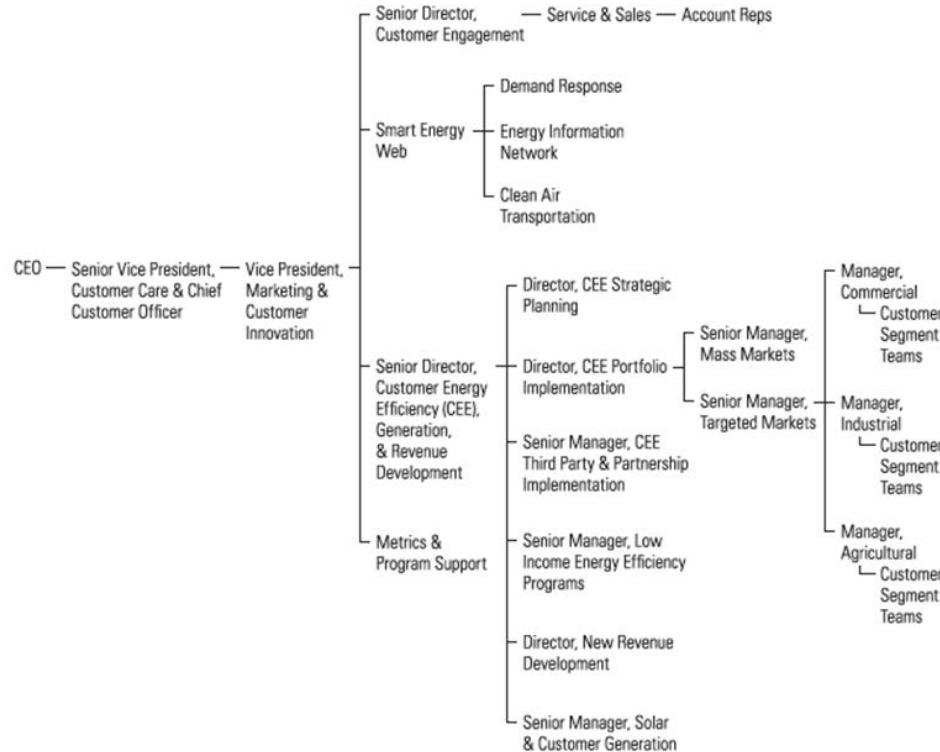


Source: Southern California Edison

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# From next to best

# The old utility silo problem



Note: This chart is not intended to be a representation of the utility's complete organization structure—many departments have been omitted.

© E source; data from PG&E

- Classic DSM org structure (like this one from Pacific Gas and Electric Co.)
- No connection to research and development
- No emerging-tech function
- Outsourced engineering services
- Fully siloed with separate budgets and goals



# Strategies for improving tech transfer

## The long handoff

Overlapping emerging-tech and energy-efficiency programs

## Cross-functional teams

Hard skills, soft skills, shared goals

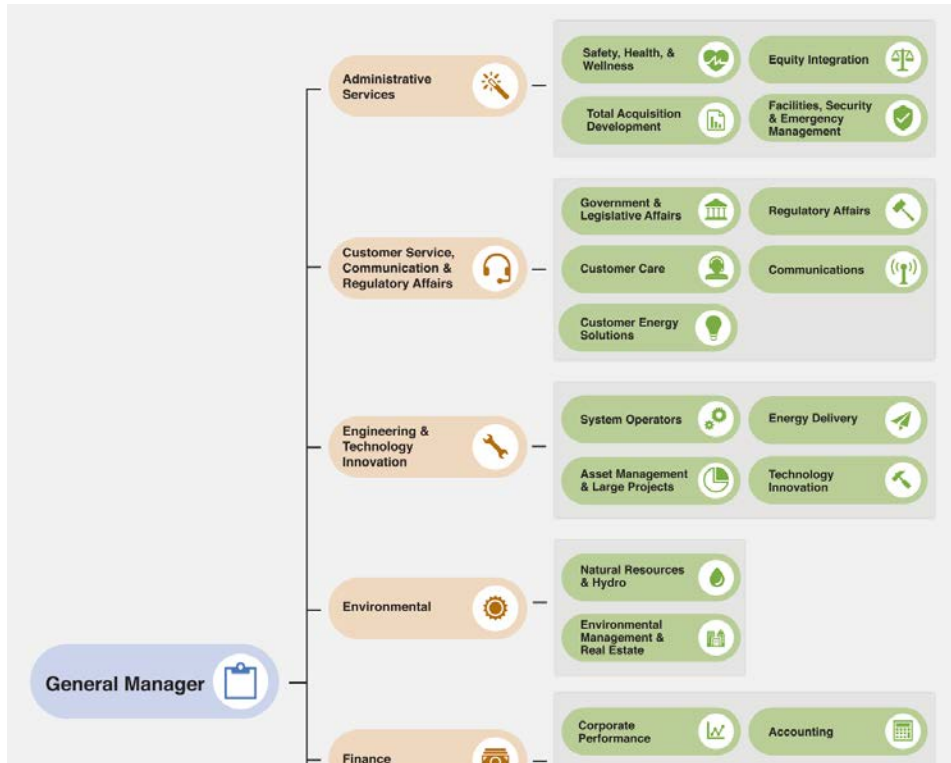
## Accelerators and incubators

Beyond go/no-go options

## Design thinking

Problems, partnerships, and programs

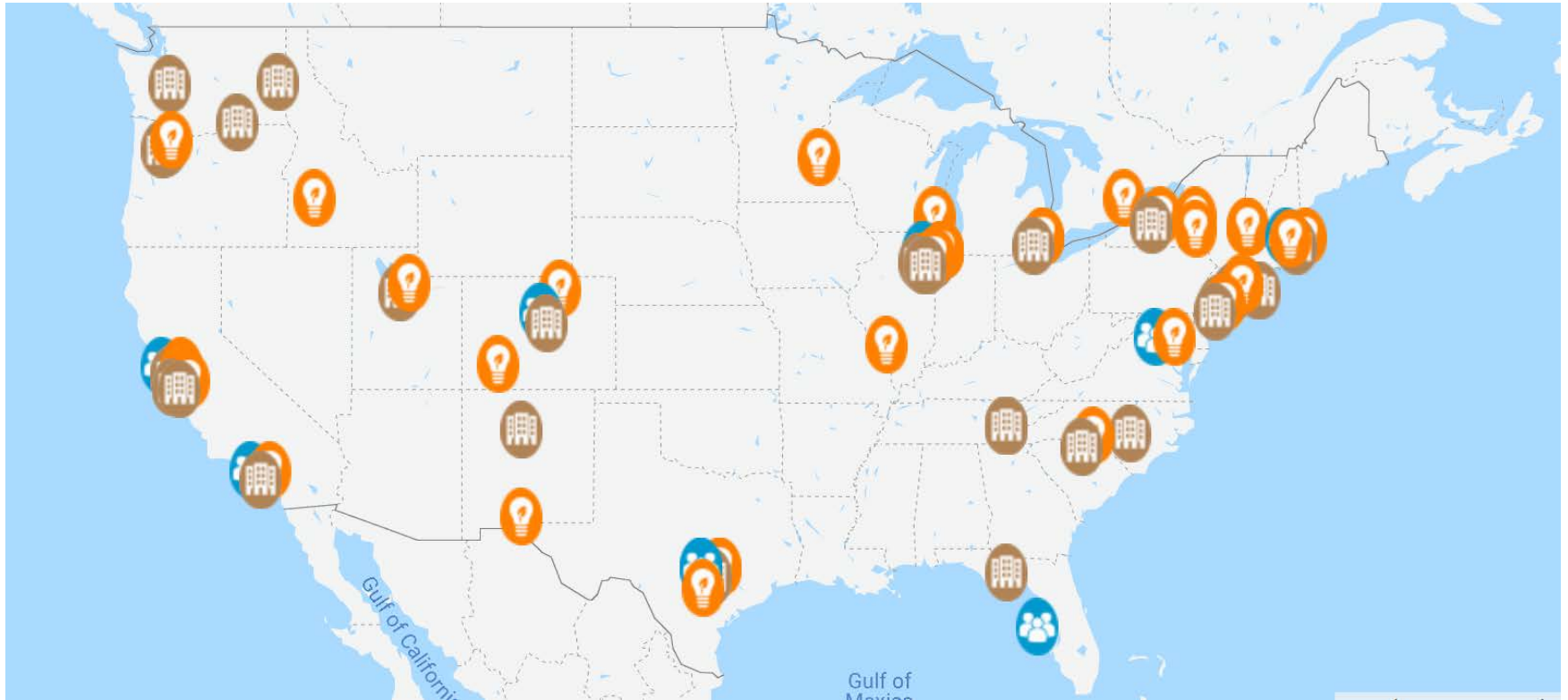
# Restructure to form customer energy solutions teams



- Modernized structure (like Seattle City Light)
- In-house research labs
- Integrated engineering and emerging tech
- Report to same executive
- Cross functional with aligned budgets and goals

© E Source; [How DSM departments are evolving into customer energy solutions teams](#)

# Work with accelerators and incubators



Source: Electric Power Research Institute ([www.incubatenergy.com](http://www.incubatenergy.com))

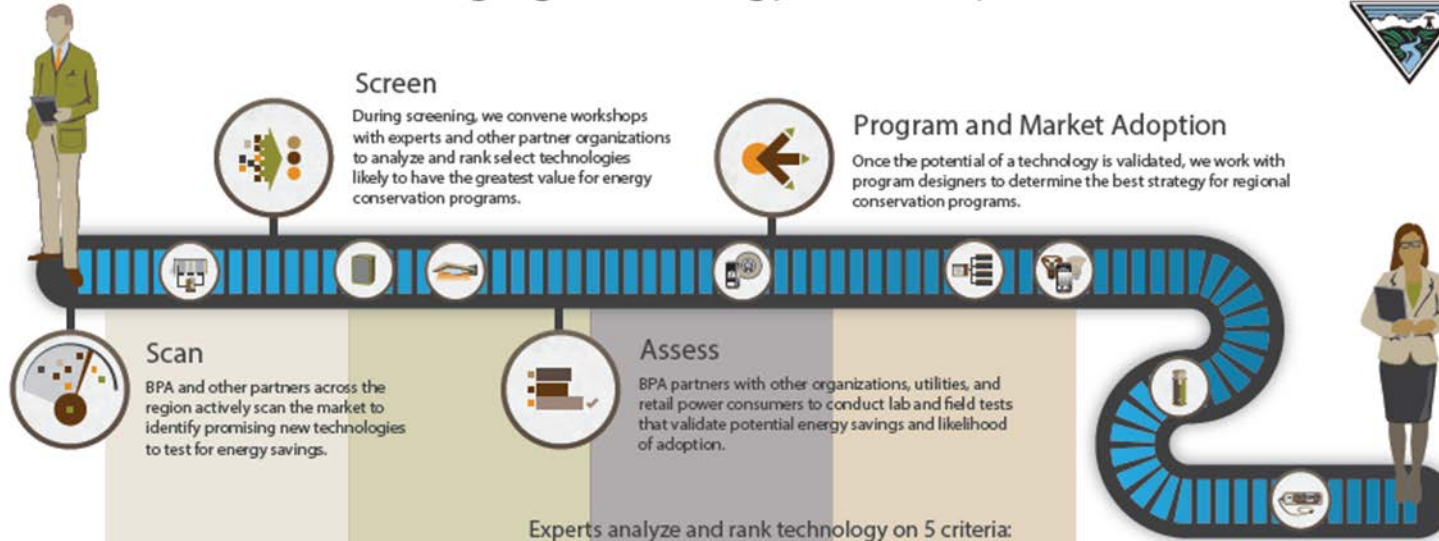
# Apply design thinking like BC Hydro



Source: BC Hydro

# Let us help you with tech roadmapping!

## BPA's Emerging Technology Discovery Process



Experts analyze and rank technology on 5 criteria:

- Energy savings
- Non-energy benefits
- Technical readiness
- Ease of adoption
- Cost effectiveness

Source: Bonneville Power Administration

# Where we go from here



## Key takeaways

- Tech evolution is messy, complex, and takes time
- Closed, siloed organizations don't foster innovation
- Cooperation, “soft skills,” and empathy are key



## Next steps

- Reevaluate your organization's goals and structure
- Collaborate with incubators and accelerators (and others!)
- Look to E Source for help with tech assessment, design thinking, and roadmapping

# Fostering an innovative environment



## Innovation and emerging tech: Let the best idea win

Ask not what new technology can do for you but why you think you need it

Bryan Jungers

[Read the blog post](#)

**E Source offers emerging-tech teams strategic technology roadmapping, assessment, and design-thinking help to keep your initiatives impactful**

# E Source tech-transfer content

- [Emerging technology resource center](#)
- [Innovation and emerging tech: Let the best idea win](#)
- [Why tech-transfer efforts aren't working, and what to do about it](#)
- Tech-transfer success stories (coming soon)



# Customer Energy Solutions



Luke Beckett

Product Manager, Technology Assessment Service,  
E Source

303-345-9176

[luke\\_beckett@esource.com](mailto:luke_beckett@esource.com)



Bryan Jungers

Senior Manager, Customer Energy Solutions  
E Source

303-345-9211

[bryan\\_jungers@esource.com](mailto:bryan_jungers@esource.com)