Home Electrification Planning & Design

Common Challenges & Getting to Solutions
OUTLINE

A. The Typical Project
B. Challenges
C. Getting to Solutions One Project at a Time
D. Getting to Solutions Across the Industry
THE TYPICAL PROJECT
(a short subject)
THIS is Typical: 1-800-Fix-My-House

- DECARBONIZE
- IMPROVE RESILIENCY
  - Power outages
  - Wildfires
- OH, AND ...

Which means: there IS no “typical project!”
Instead, lots of VARIABLES!
CHALLENGES
(a somewhat longer subject)
Challenges: the Boring Obvious Ones

1. What people want
2. What they can afford
3. Electrical panel constraints
4. Utility companies
5. Supply shortages
6. A very busy industry

Now for the interesting challenges ...
Challenge #1: Do It Right ... or Not?! 

The Loading Order—

1. Improve efficiency

THEN

2. Electrify

WHY DOES THIS MATTER?

A. Electricity rates are high, so even with high-efficiency equipment costs may go up

B. You don’t want to oversize new HVAC systems (save money, save energy)

C. Comfort & expectations

D. Happy customers matter!
Challenge #2: Variable Vintage(s)

- Electrical service
- Building codes in effect at the time
- Changes made over time

What if you wanted to put an electric range here?
Challenge #3: Variable Condition

- Construction quality
- Design quality
- Deferred maintenance issues

QUIZ: Can you find the footing?

QUIZ: What is this?
Challenge #4: Variable Configuration

- Attics

QUIZ: which is the attic -- THIS? or THIS?
Challenge #4: Variable Configuration

- Attics
- Crawl spaces
Challenge #4: Variable Configuration

- Attics
- Crawl spaces
- Continuity of air + moisture + thermal barriers ... or NOT!!???
Challenge #5: Doing It Right ...

TAKES LOTS OF:

- Skills
- People
- Coordination
- Time
- MONEY
Challenge #6: Being Sure You’ve Heard from all the decision-makers!

She’s running the project!
Challenge #6: Being Sure You’ve Heard from all the decision-makers!

[SIX MONTHS LATER ...]

But did I mention ... ???!!
Challenge #7: Limited Solution Providers – electrification-savvy building professionals

NEEDED

NOW
Challenge #8: There Is No Typical Project!

... and we need to get past that

If

ONLY!!!
GETTING TO SOLUTIONS
one project at a time
IN PRINCIPLE, this is (relatively) straightforward

1. Be clear about expectations and tolerances:
   - Time/schedule
   - Complexity
   - Budget

2. Hand pick known, competent solution providers

3. Set expectations:

4. Track team communications until the work is finished
GETTING TO SOLUTIONS
across the industry
Solution #1: Educate LOTS of Solution Providers
Solution #2: SIMPLIFY—Develop “70% Packages”

1. Now there are no typical projects but—
   - Custom projects will give way to mass need
   - We need economies of scale
   - We need speed

2. Cover ENCLOSURE + ELECTRIFICATION plus
   - Low-Amp options
   - Solar where feasible
Solution #3: Reduce Purchase Friction

1. Encourage preemptive replacement
   - Educate about appliance lifespan*

2. CCAs, utilities, regional agencies: create BULK BUY & warehousing programs
   - Intake purchase & electrification requests
   - Refer leads to installation trades

3. Offer 0% financing to low-income households


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<tr>
<th>ITEM</th>
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<tbody>
<tr>
<td>FURNACE</td>
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<tr>
<td>WATER HEATER</td>
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Thank you!

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