

Local Government Permitting of Energy Infrastructure



Presented by:
David J. Gellner, AICP

A Little About Me



- Senior Environmental Planner for POWER Engineers Inc.
- Permitting for energy projects working with Federal, State and local government entities
- Over 25-year career in planning
 - 24 in public sector, 16 in Utah
 - 2 years in the private sector

Overview

- Why should we care?
- Current Issues and Challenges
- Common Permitting Procedures
- Code Gaps
- Potential Solutions

Why should we care?

Our Electrical Infrastructure Matters

- How we live/function/build cities depends on reliable and available electricity
- Critical “building block” to development
- Energy corridors and utility planning often left out of the equation.
- Normal functions cease when the power is OFF





Current Issues and Challenges

Growing Demand & Changes

- Population growth and shifts
- Data centers and Artificial Intelligence require tremendous amounts of energy
- Forecasted to be largest and fastest growing electrical load for utilities
- Transition to renewables – source change

Changes – Renewables



- Solar growth in Western States
- More ubiquitous than other sources
- Often in remote areas – BLM support
- Need to get power to consumer

Changes – Renewables



- Locationally dependent – does not work everywhere
- Often remote
- Need to get power to consumer

Areas of Concern

- Our infrastructure is not very “robust” in many regions
- Aging infrastructure – often well past the intended service life
- Increased demand – more people, hotter summers, more sprawl, more extreme weather events – “at maximum capacity”

Threats

- Wildfires and Infrastructure Damage
- Extreme weather events
- Increased demand itself

Wildfires



Wildfires



Extreme Weather Events



Location Challenges

- Best to follow existing linear features
- Locationally dependent
- Why not move it elsewhere?
- No “wireless electricity” lines

Recap

✓ Significant challenges

✓ Increasing demand

✓ System at maximum capacity in many areas

Different Kinds of Lines

Different Types of Lines & Towers

- Distribution (small) vs. Transmission (large)
- Transmission are more visually impactful
- Transmission more regulated:
 - Clearances - FERC
 - ROW widths – often very large

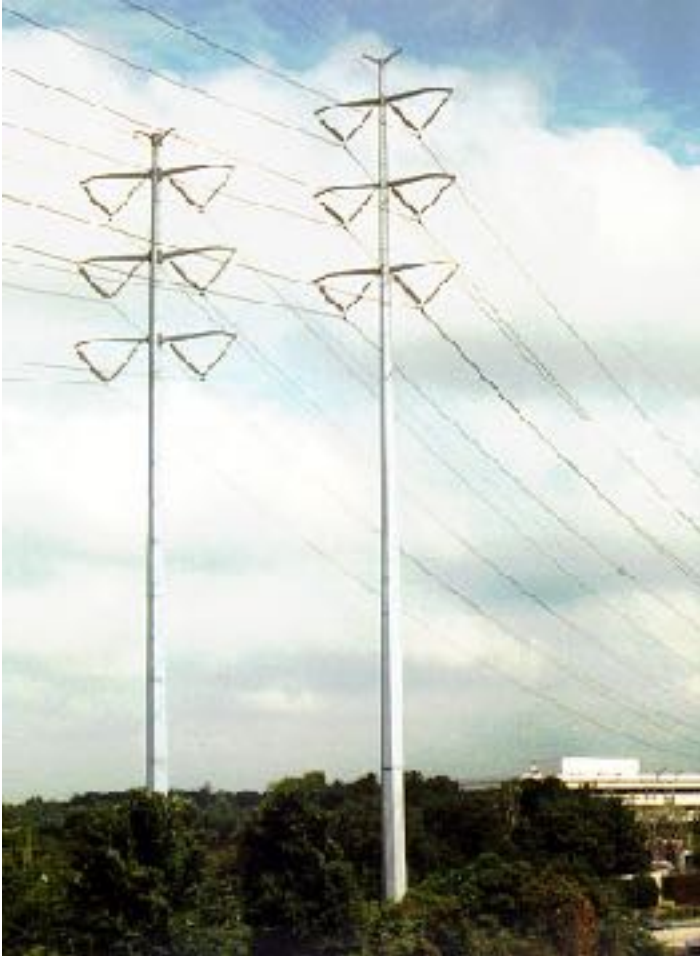
Different Electrical Structures



Large Transmission Structures



Large Transmission Structures



Local Distribution Lines



What we often hear

- Why can't you just bury it?
(You can!)

Burying is an Option – For a Price



Concrete access vault for transmission line



Typical structure for transitioning transmission line between overhead and underground

Common Permitting Procedures

Conditional Use

PROS

- Allows for reasonable conditions to be applied
- Allows for citizen input

CONS

- May set unrealistic expectations for mitigation

Permitted Use

PROS

- Acknowledges need and importance of use
- Eliminates a potentially contentious process

CONS

- Citizens may feel they don't have input
- May miss out on local nuances and issues

Zoning Overlay

PROS

- Underlying zoning becomes less relevant and use of property aside from overlay corridor can remain the same.
- Allows City or County to negotiate for mitigation measures on a larger scale.
- May foster a more holistic approach to siting.

Zoning Overlay

Cons

- Legislative process – two step – may take longer
- May be more subject to influence through public clamor as a legislative decision.

Code Gaps

What is in your code?

- Energy facilities don't fit neatly into the “zoning box”
- Not clearly defined in many codes
- Leads to confusion about process and what “chute” to send something down
- Local entities reluctant to commit to an answer when things are not well-defined in their codes

Unique Needs for Energy Facilities

- Vegetation clearances
- Fencing and security
- Fire protection and suppression
- Ballistic protection

Where does it fit?



We can make it fit!

Storage – New Challenge w/ Renewables

- Renewables may have “peak generation times”
- How do you store energy for later demand?
- Emerging field but one that will grow w/ renewables

BESS – Battery Energy Storage System



- Used to store energy at times of peak generation
- May look like a yard of shipping containers

BESS – Where Does it Fit?

Questions:

- How is it defined in your code or is it defined?
- Do you have a process to define it?
- Do landscaping and other setback requirements apply?

Upgrade Challenges

- Communities built up around electrical infrastructure and existing substations
- Hard to expand – community resistance
- Can't bury a substation
- How do you expand when “landlocked”?

Typical Substation



- Occupies a large surface area
- Sticks out in a neighborhood setting
- More suited to industrial areas

Gas Insulated Substation (GIS)



- May blend more seamlessly into a neighborhood as a “building”
- More compact – less surface area needed

GIS – What is it?

Questions:

- Is it an occupied structure?
- Do landscaping and other setback requirements apply the same as a building?

Other Considerations

- State PUC may overrule local zoning decisions
- Additional state mechanisms to ensure noticing and public involvement
- Things don't fit neatly in the “zoning box”

Recap



Typical zoning is often “one size fits all”



Technology is changing faster than codes



Do you have a process to consider new uses?

Potential Solutions

Update Your Codes – What Works for You?

- Update zoning codes to include energy uses and have a mechanism for interpretations as technology evolves.
- Figure out what works for your jurisdiction and clearly define your own permitting process.
- One size does not fit all!

Create a Special Category/Process

Create a special review category for “facilities of regional interest” that allows public input and feedback.

This would acknowledge that these types of facilities are:

- Necessary and critical
- Regionally important
- Locationally dependent
- Difficult to mitigate

Summary

- Look into your code and identify where there are gaps or missing pieces.
- Understand the importance of having a clear and adaptable process for zoning.
- Understand the unique needs and importance of electrical infrastructure.
- Figure out what works for your jurisdiction and clearly define your own permitting process.

Questions?

Thank You

