Making Energy Work for Rural Oregon
2017 Fall Symposium
Community Resiliency:  
Emergency preparedness and energy independence

• **Benchmarking:** Dan Bihn, Strategic Communications Engineer,  
  Bihn Communications, LLC

• **Grid Technology:** Ken Dragoon, Founder  
  Flink Energy Consulting

• **Community Resilience:** Masami Nishishiba, Associate Professor,  
  Associate Director, Center for Public Service  
  Portland State University

• **Emergency Preparedness:** Barb Ayers, Emergency Manager,  
  Hood River County

• **Moderator:** Rick Williams, Principal, Oregon Applied Research  
  Senior Fellow, PSU Center for Public Service
Energy and its Implications for Rural Resilience

In the Pacific Northwest, the Cascadia subduction zone earthquake and resultant tsunami present serious threats to the life, infrastructure, and the economy. But ice storms, floods, forest fires, and other more regular disasters also drastically affect society.

How might rural communities reduce the risk of these types of threats, while strengthening the grid during normal conditions?

How might rural communities fare in these situations, and how might they reduce the downtime after such events?

Definitions:  
Energy
Rural
Rural Resilience
Resilience and Resiliency

• re·sil·i·ence
  /rəˈzilyəns/
• noun

  noun: resiliency

1. the capacity to recover quickly from difficulties; toughness.
2. the ability of a substance or object to spring back into shape; elasticity.
Disaster resilience is the ability of individuals, communities, organizations and states to plan for, prepare, adapt to, and recover from hazards, shocks or stresses without compromising long-term prospects for development.

- Governance and Social Development Resource Centre
- www.gsdrc.org/topic-guides/disaster-resilience/concepts/what-is-disaster-resilience/

Community resilience is a measure of the sustained ability of a community to utilize available resources to respond to, withstand, and recover from adverse situations.

- Rand Corporation
- https://www.rand.org/topics/community-resilience.html
Resilience Defined

“The term resilience refers to the ability to prepare for and adapt to changing conditions and withstand and recover rapidly from disruptions. Resilience includes the ability to withstand and recover from deliberate attacks, accidents, or naturally occurring threats or incidents.*

* President Policy Directive 21 - Critical Infrastructure Security and Resilience
February 12, 2013
**Systems Approach:** Begin with the end in mind: For today, electrical power to the Grid

- Policy Perspective
- Systems Perspective
- Grid Technical Perspective
- Grid Integration Perspective

More to Rural Energy than “Levelized Cost of Energy” or “Rate”

- System Benefits
- Public Benefits
- **Cost + Pricing + Value**

Distributed Energy Resources (DER) and MicroGrids: emerging fields

“The Grid” is an amazing, complex invention that is ~100 years old

- Historically, when it breaks, who pays to rebuild?
- Looking forward: Who can/should pay for grid resilience?
Getting Serious About Resiliency:

How Can Rural Resilience Help Keep The Lights On?

Enhancing the Resilience of the Nation's Electricity System

(2017)

National Academies Press. https://doi.org/10.17226/24836
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Is this:
- a Technology play, or
- a Policy play, or
- a Stakeholder Engagement play?
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What can we do that matters?
Plan (Family and Neighborhood)
Prepare (and Practice)
Respond
Adapt
Recover – Better!
Examples:
Camp Gear = Resilience = Shelter-in-Place

TURN YOUR WASTE INTO
2 HOURS OF COOKING GAS AND LIQUID FERTILIZER DAILY
Examples:
Camp Gear = Resilience = Shelter-in-Place
Examples:
Camp Gear = Resilience = Shelter-in-Place

Solar and Portable Power

View: 30 | 60 | 90

Sort by: Reference

Brand
- Goal Zero
- Yeti

Features
- Batteries Included (1)
- Lithium (4)

Power Source
- Solar (2)
- Battery (3)
- Gas (3)

Best Use
- Multisport (3)
- Camping (1)
- Backup (2)

Power Source (1)
- Solar (3)
- Battery (1)
- Gas (2)

Photography (2)
- Camera (1)

Sizing (1)
- Small (1)

Goal Zero
- Yeti 1500 Portable Power Station $1,299.95
- Yeti 1500 Solar Panel $299.95
- Yeti 400 Portable Power Generator $499.95

Harness the power of the sun with savings that are sure to brighten your day!

Harbor Freight carries a full line of affordable solar panel kits - making it easy for you to set up your home solar power system. Our solar panel kits and solar chargers are great for charging your car batteries, running laptops, or powering electrical items in campgrounds where generators are forbidden. Plus you get the benefit of having "off the grid" backup in case of outages or natural disasters without having to worry about having enough gas for your generator.
Panel Presentations
Q & A