



# International Energy Systems Integration Workshop

JUD VIRDEN, ASSOCIATE LABORATORY DIRECTOR

Pacific Northwest National Laboratory  
Richland, WA

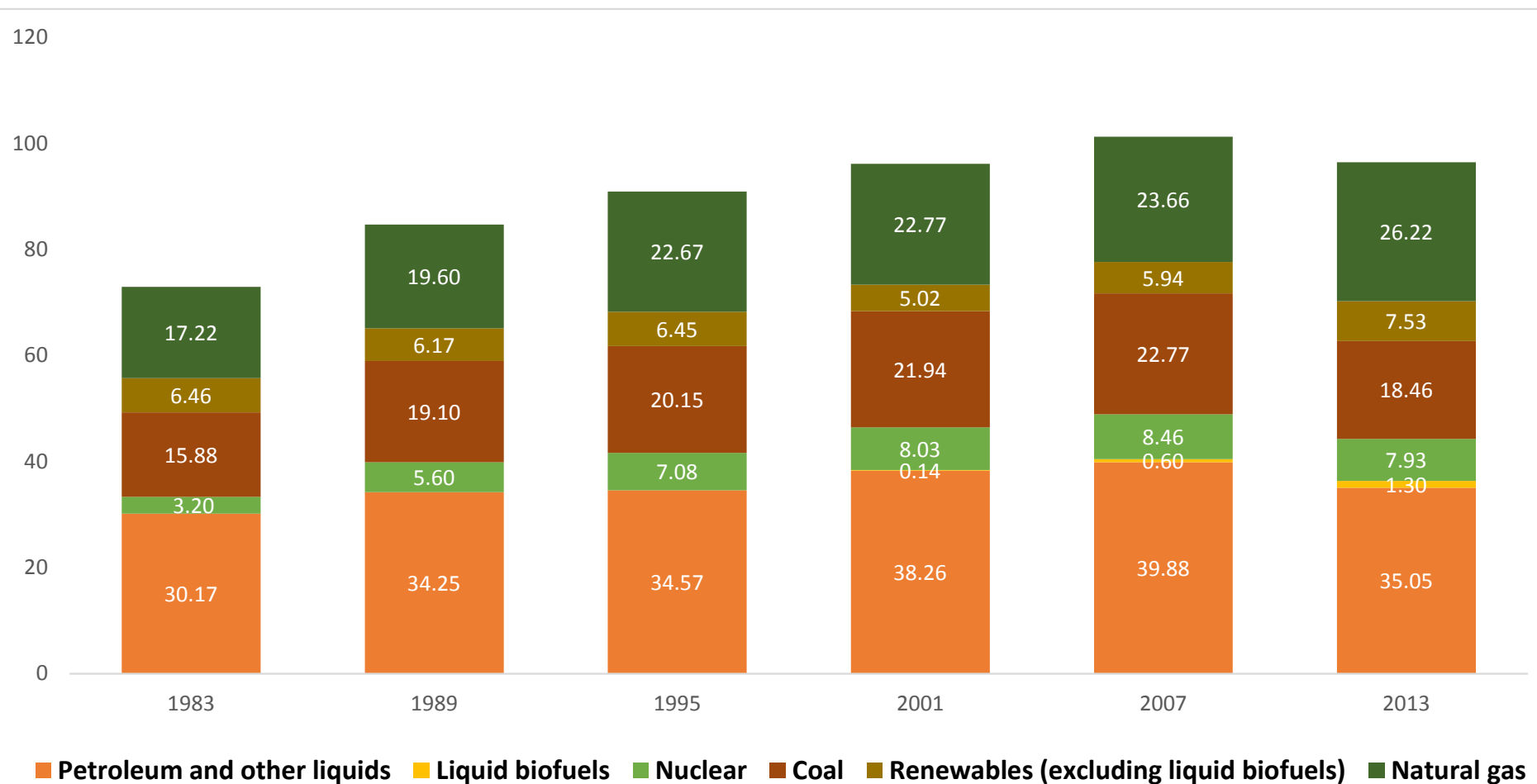
# Our Workshop Purpose

- ▶ Bring together global research leaders to identify major market needs in integrating energy systems
- ▶ Establish the science and technology challenges in addressing these market needs
- ▶ Understand potential barriers in addressing the market needs in energy systems integration
- ▶ Build strategic international research partnerships



# Primary U.S. Energy Consumption by Source

► Moving from centralized to decentralized



# Example Breakout Session

## ▶ Breakout Session

- Session Objectives and Desired Outcomes
- Framing the Issues
- Identifying the Challenges
- Taking Action
- Next Steps

## ▶ Session Facilitators

- Mark O'Malley, University College Dublin
- Michael Kintner-Meyer, PNNL
- Rob Pratt, PNNL
- David Corbus, NREL
- Ben Kroposki, NREL
- Jeffrey Taft, PNNL

- ▶ Preview of DOE Grid Integration Strategic Plan Workshop
  - Kevin Lynn, DOE-EERE
- ▶ IEA Perspective on Energy Systems Integration
  - David Elzinga, International Energy Agency
- ▶ Reports from Breakout Sessions (including next steps)
  
- ▶ Panel Discussion: What is an appropriate framework for international collaboration on Energy Systems Integration?
  - Bryan Hannegan, NREL
  - Jud Virden, PNNL
  - Mark McGranaghan, EPRI
  - Mark O'Malley, University College Dublin