Five Almost-Practical Policies to address High Energy Costs in Remote Alaska

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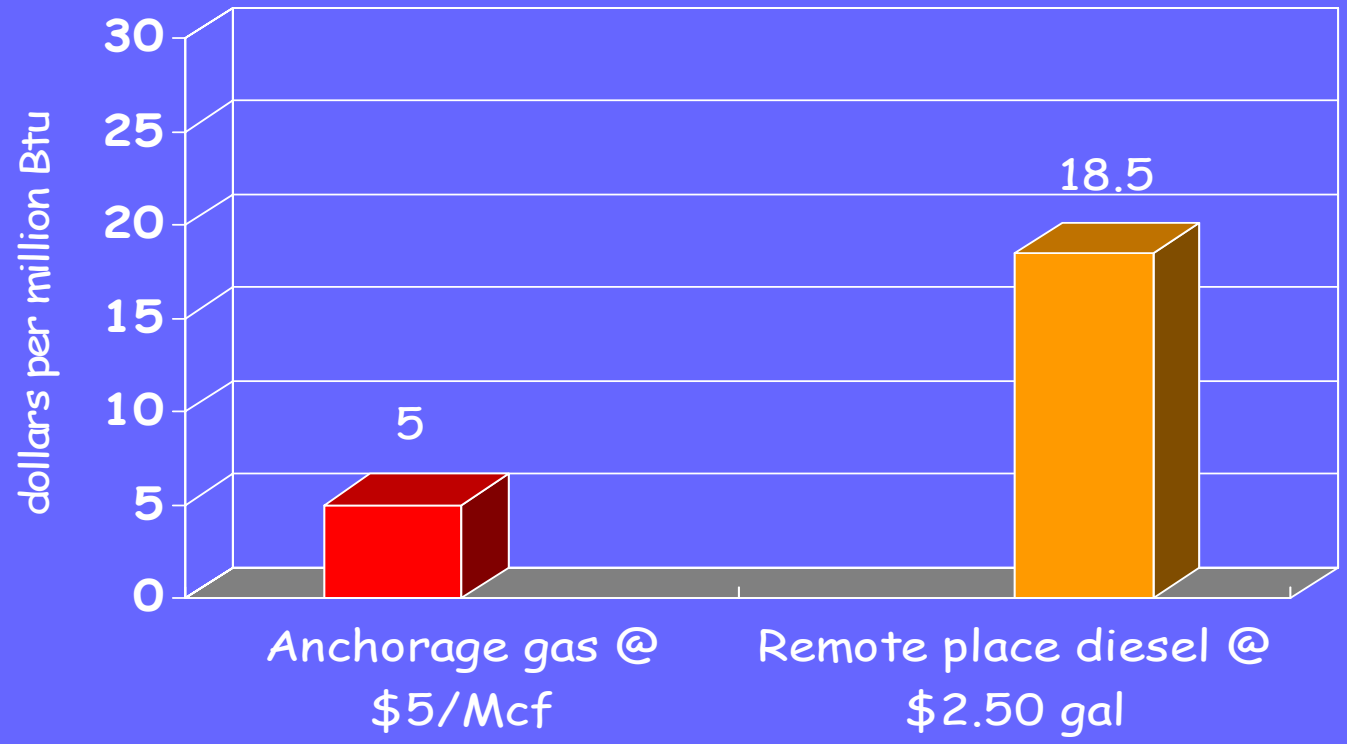
The Problem:
High energy COST = High energy PRICE



However, Price is Not Cost

- Very easy to reduce the price of things in remote Alaska
  - rolled-in pricing (First-class mail)
  - subsidized services (bypass mail)
  - cost-shifting (Bill the School District!)
- Much harder to reduce the cost – the overall resources used to provide energy when, where, how people need it

Physics Reminder: Energy is converted from one form to another

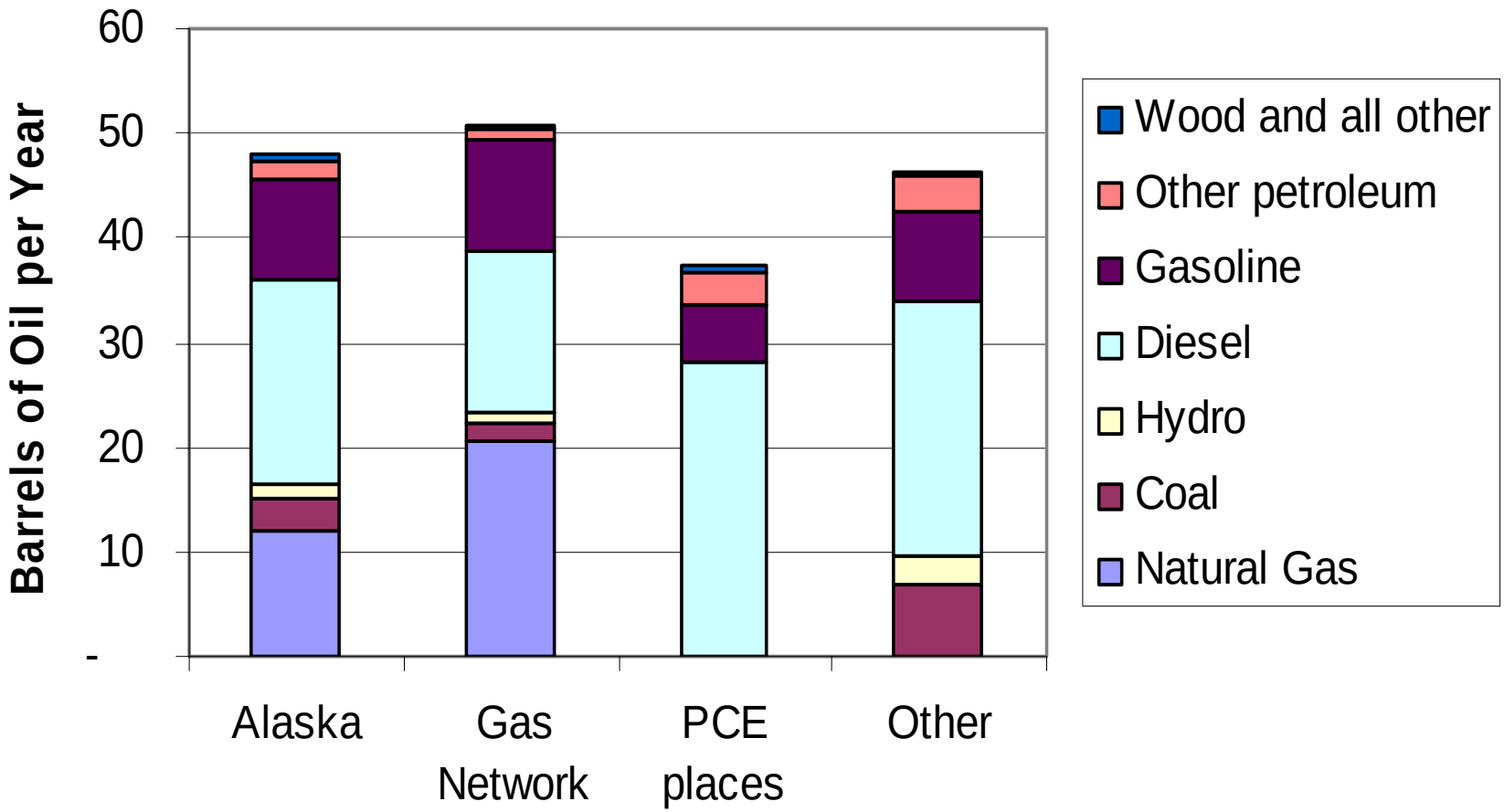
- Electricity is an energy "currency," not a primary energy source
- Hydrogen is an energy currency too!
- Example: Your Toaster

  Solar energy→ plants→Natural Gas→Electricity→Heat→

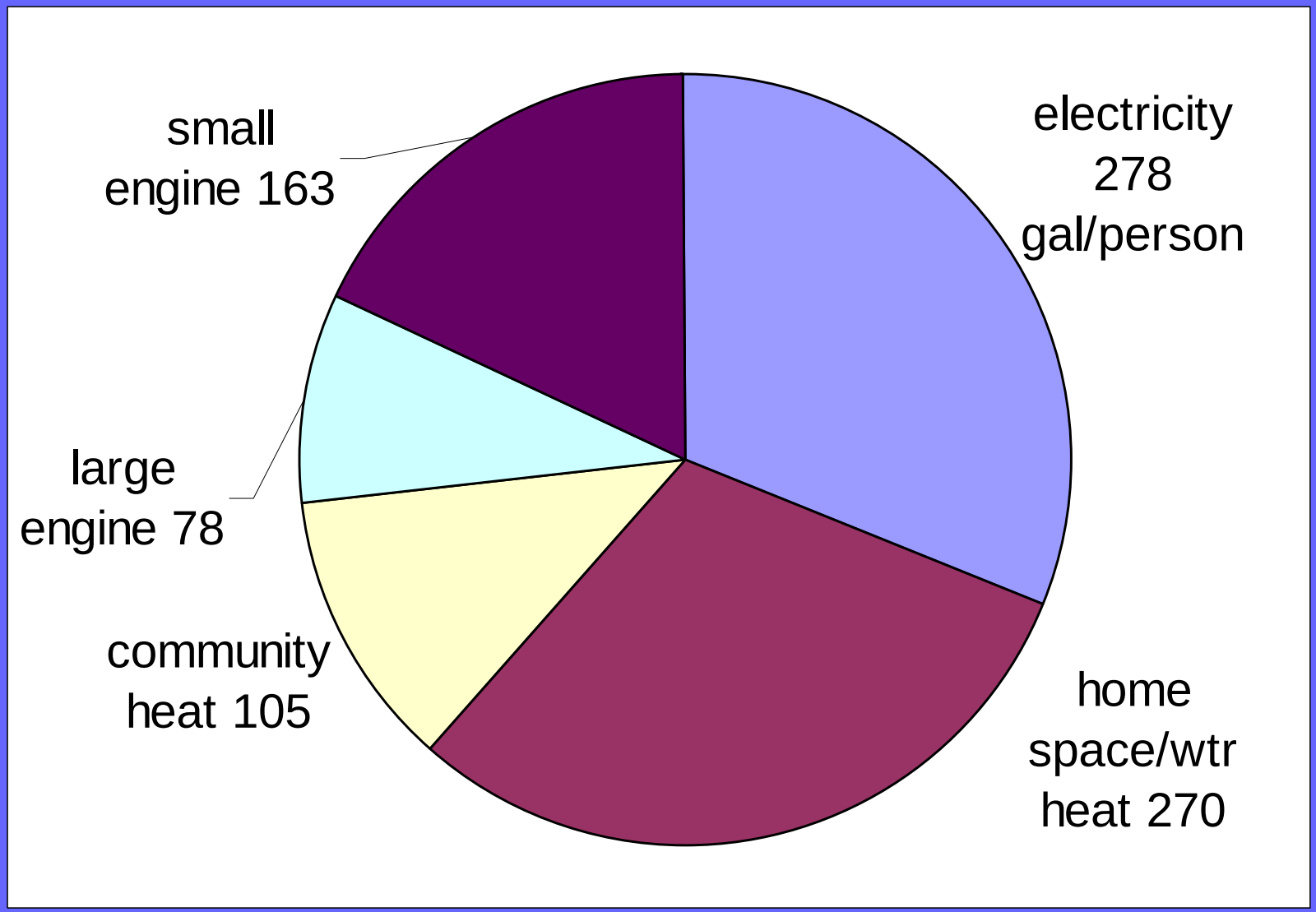
  (toast + low-grade heat)

Primary energy consumption per Alaskan

barrels oil per person per year



How we use it: about 900 gallons diesel/person/year in remote places

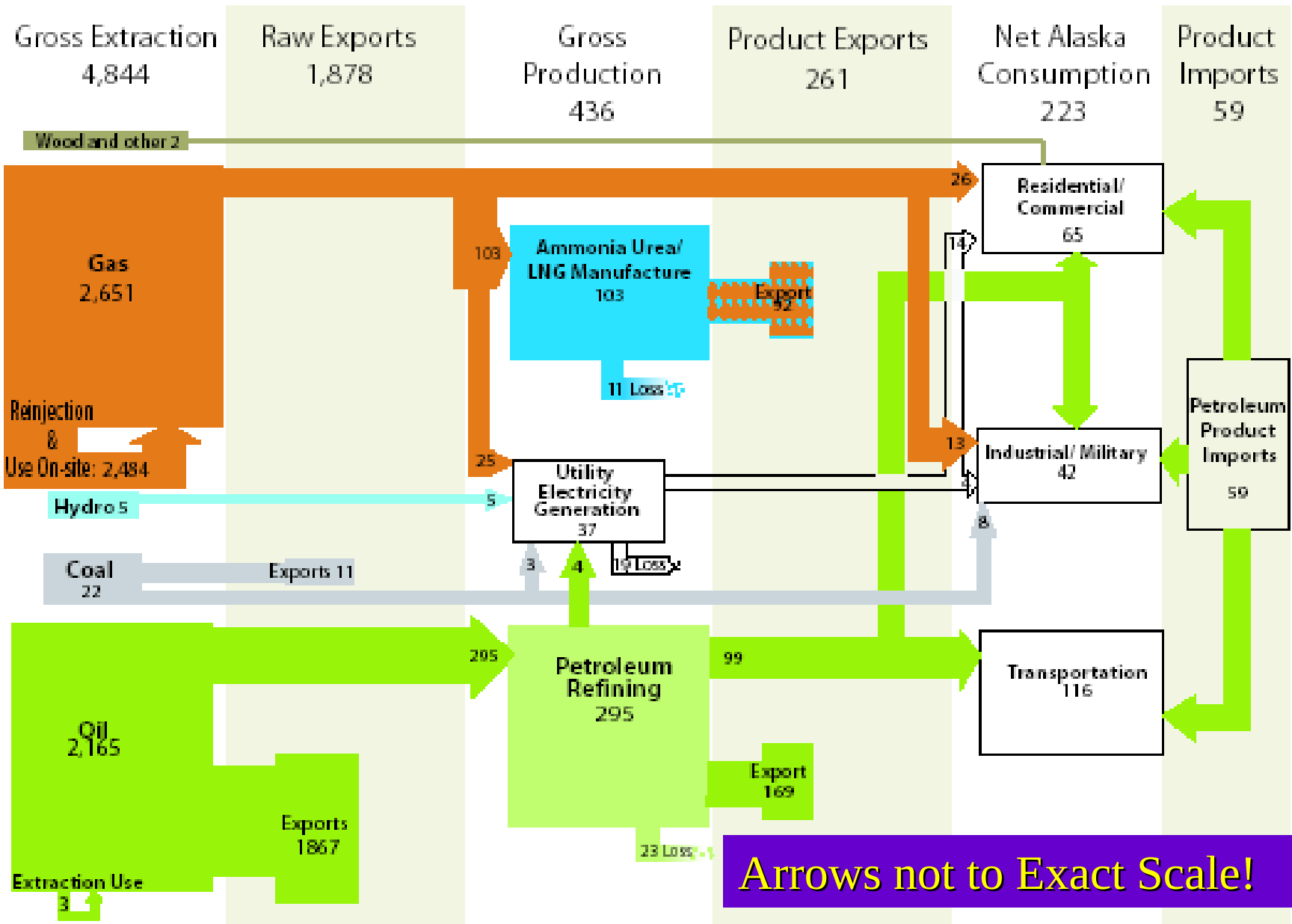


almost practical Policy #1:
Share the wealth from high oil prices

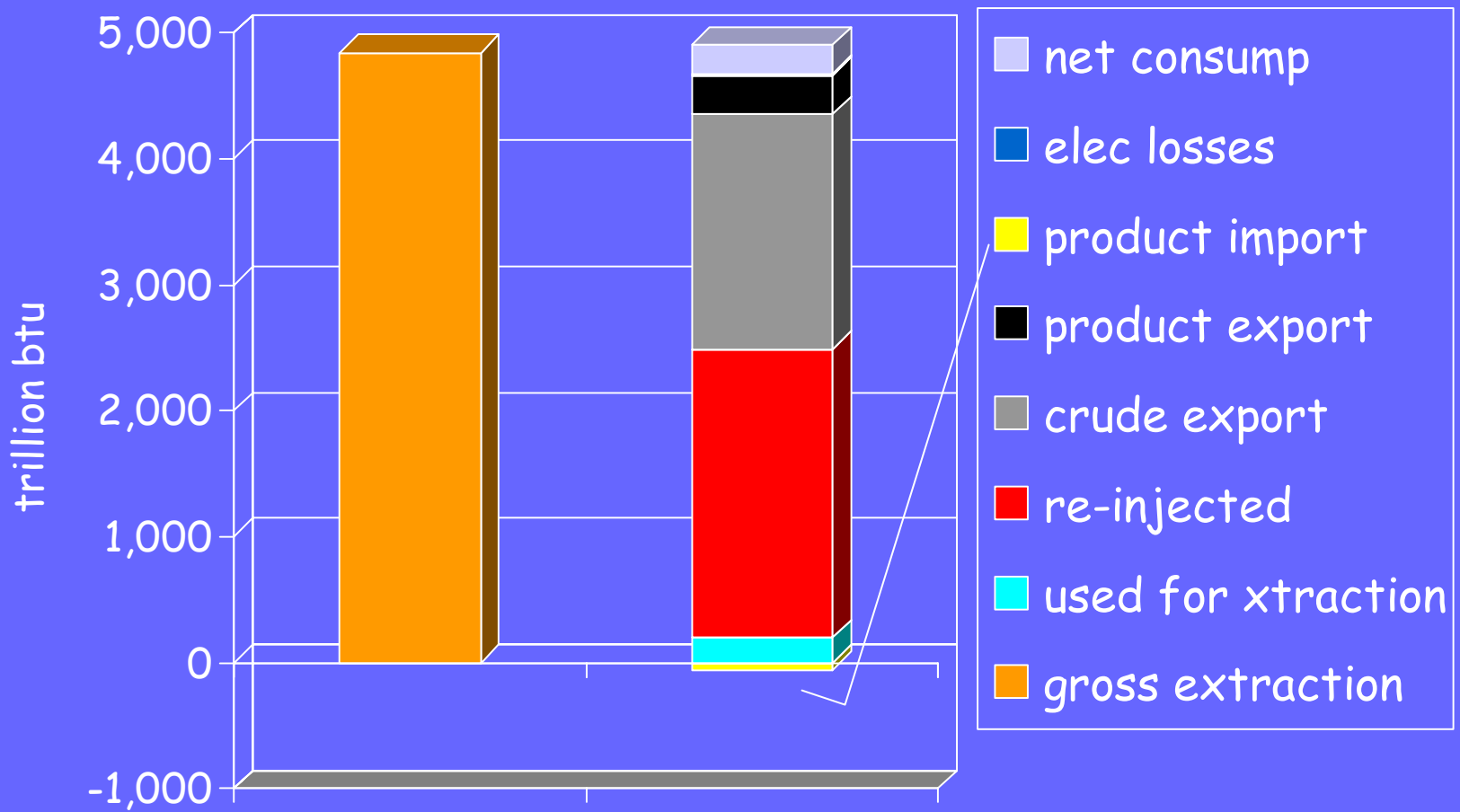
Practical because:

- Alaska is overwhelmingly a Seller of Energy.
- Therefore, we are in GREAT FISCAL SHAPE, overall, when oil prices rise.
- Short-term, do this with cash (revenue sharing) rather than fancy energy projects

2001 Alaska Energy Flow (Trillion BTUs)



Overall Disposition of Energy



Reduce the Energy Bill: Details

- Fully fund PCE, with sliding funding when diesel prices are high
- Community energy assistance tied to rising and falling oil prices

almost practical policy #2:
Make PCE a Lump-Sum Payment

Practical because:

- Relatively easy to create a fair formula using existing data and program delivery channels
- Might also REDUCE program admin costs

Make PCE Lump-sum: Details

- Reward utilities for efficiency improvements
- Reward entrepreneurs for new technologies
- Reward consumers for being frugal
  - Preserve the Price Signal!

almost practical policy #3: Pre-fund energy costs (with an endowment) as part of a capital project

Practical because:

- We spend a lot of money on the "capital" budget
- It provides powerful signals for efficient design
- It's a proven, prudent way to build sustainable infrastructure
  - Most private universities require this

Pre-Fund Energy Costs as Part of a Capital Project: Details

- Include an energy (and maintenance?) endowment in all appropriations
- Maintain endowments in escrow;
- Make payments partly as lump-sum amounts to further encourage efficient facility design

almost practical Policy #3A: Include Life-Cycle Energy Costs in Evaluation of the "Low Bid"

Practical because:

- Communities could do this on their own
- Rewards designers for efficient design rather than penalizing them for higher up-front costs

almost practical Policy #4: Focus State capital $$ on Energy-Saving infrastructure, Away from Energy-Using Infrastructure

Practical because:

- You save the most $$ with up-front efficient design

almost practical policy #5: Focus State R&D dollars on Adaptation of Emerging but existing Technologies

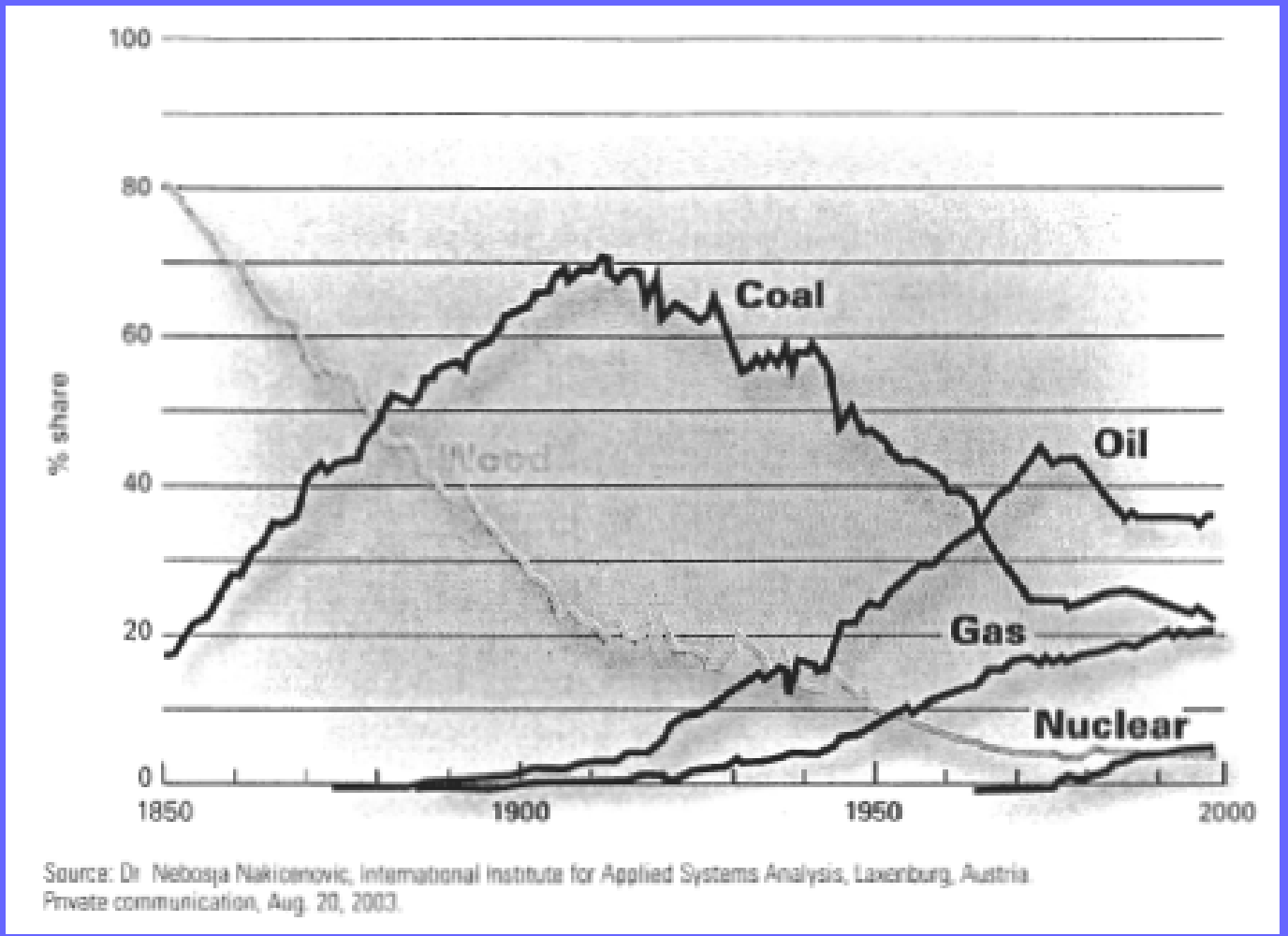
Practical because:

- Feds and private sector are conducting major efforts on "new" stuff
- Alaska is a unique market niche with harsh conditions, most technologies require adaptation

Focus on Adaptation: Details

- Continue support for wind technology, focus on shared O&M from regional nodes
- Pilot projects:
  - Direct Hydrogen combustion in vehicles
  - Small-scale coal gasification
  - Coal-bed methane
  - Biodiesel utilization

Changing Mix of U.S. Primary Energy Sources



Source: Dr. Nebojsa Nakicenovic, International Institute for Applied Systems Analysis, Laxenburg, Austria
Private communication, Aug. 20, 2003.

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- Other references:
- Alaska Electric Power Statistics (with Alaska Energy Balance) 1960-2001 by Scott Goldsmith, November 2003. http://www.iser.uaa.alaska.edu/Publications/akelectricpowerfinal.pdf