

center for
ENERGY STUDIES

Rice University's Baker Institute for Public Policy

Modeling energy impact of climate policy

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EIA Virtual Workshop, June 2022

About Baker Institute & CES

Baker Institute for Public Policy

- Founded by former US Secretary of State James A. Baker III (1993)
- Non-partisan, independent public policy analysis
- No. 3 among the world's university-affiliated think tanks (U Penn survey)

Center for Energy Studies

- No. 1 among the world's energy- and resource-policy think tanks
- <https://www.bakerinstitute.org/center-for-energy-studies/>

General analytic best practice re: long-term energy outlooks

Be humble

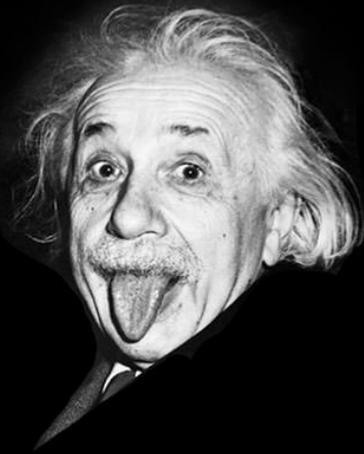
Involve the customer

Ask the right question

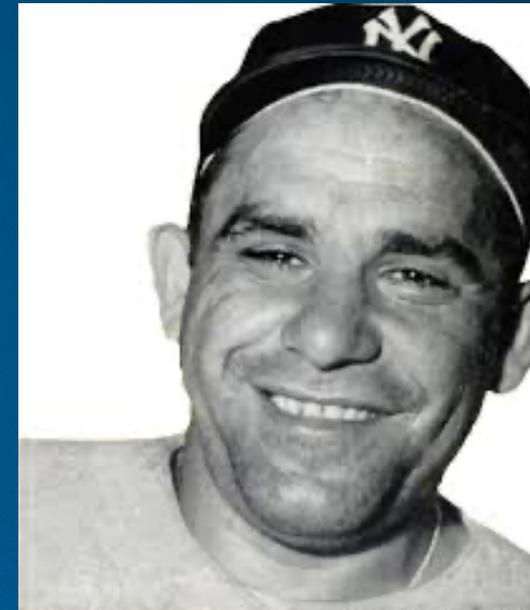
Use the right tool(s)

General analytic best practice re: long-term energy outlooks

Be humble



“I never think of the future, it comes soon enough.”
Albert Einstein



“It’s tough to make predictions, especially
about the future.”
Yogi Berra

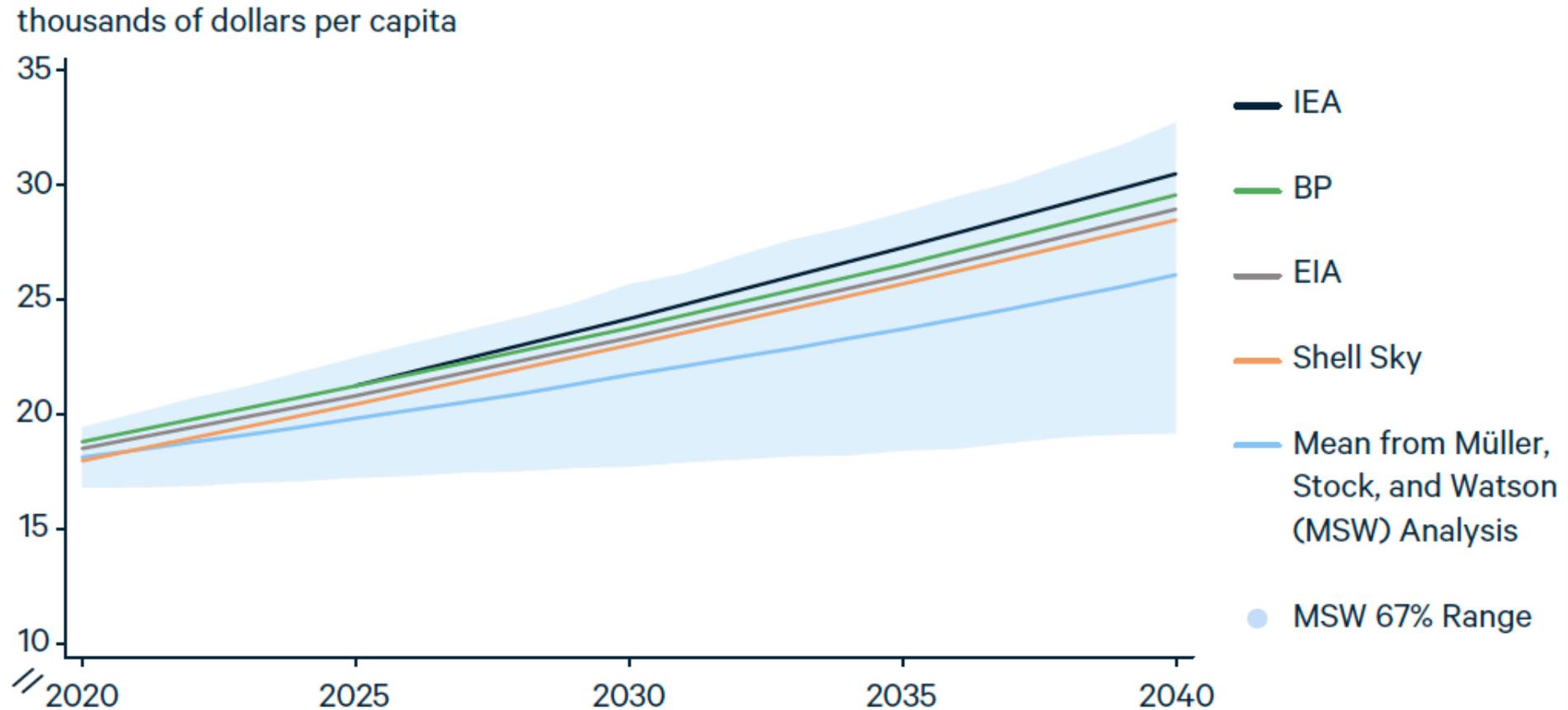
General analytic best practice re: long-term energy outlooks

Be humble

- You're almost certainly too certain 😊
 - Re: central tendency and range of outcomes
 - Expertise can exacerbate
 - Beware of knife-edge solutions
- How to address? Broaden your horizons
 - Read widely!
 - Seek alternative perspectives
 - Latest analytic techniques

Do we understand uncertainty?

Figure 25. GEO Projections versus Likely Range of Global Per Capita Income



Source: RFF (2020)

General analytic best practice re: long-term energy outlooks

Involve the customer

- Anticipate: What is being asked vs what is needed
- What artform?
- Analytic integrity/objectivity
 - Don't over-promise re: capability or certainty

General analytic best practice re: long-term energy outlooks

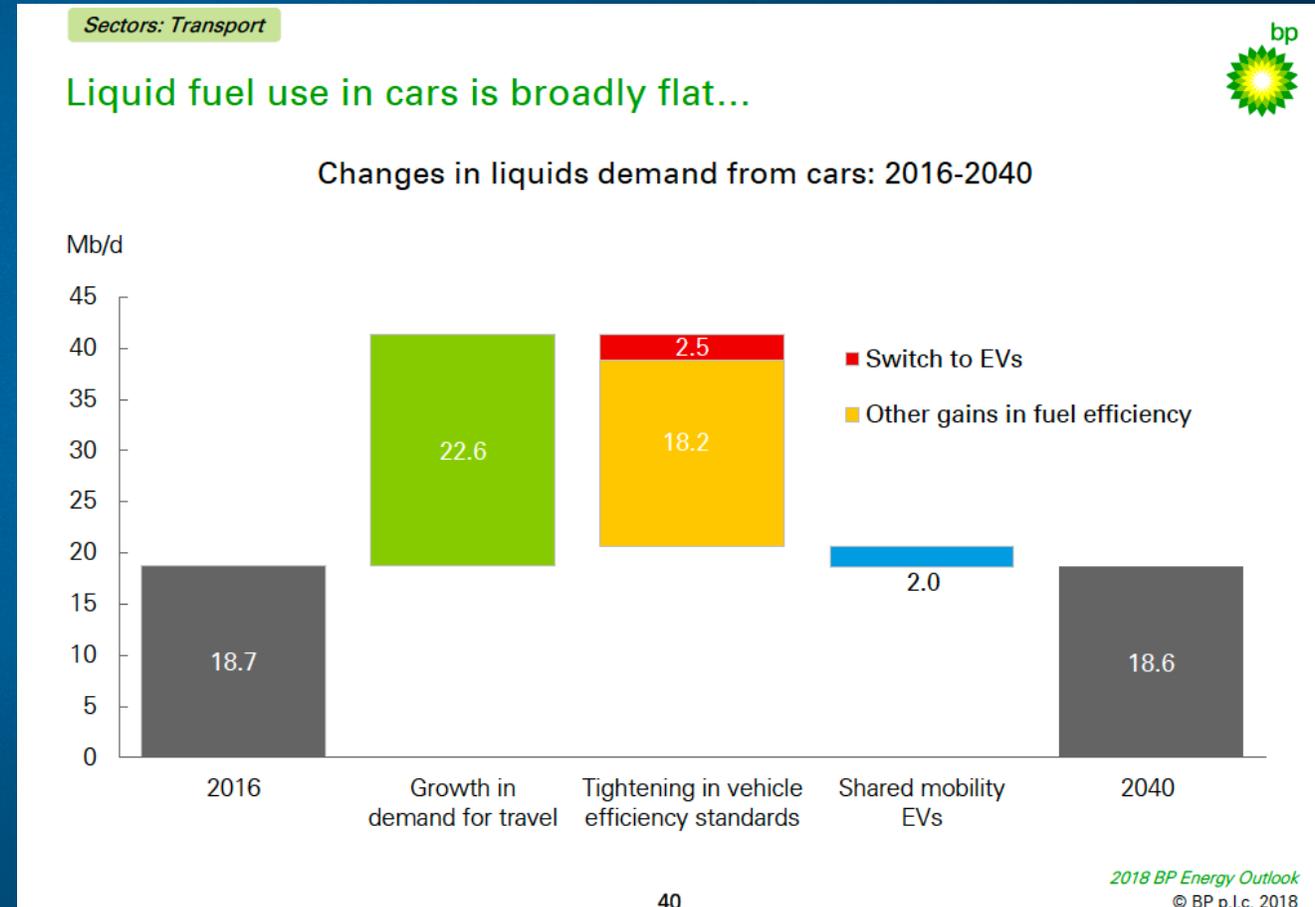
Ask the right question

- What is both uncertain AND impactful?
- What matters to your customer?
- Be flexible: Don't anchor on last year's question
- Be creative: Can it be asked a different way?

General analytic best practice re: long-term energy outlooks

Ask the right question

➤ Uncertainty vs impact



Source: BP (2018)

General analytic best practice re: long-term energy outlooks

Use the right tool(s) for the job

- Feedback loops/unintended consequences of climate policy?
- Cost-effective options for power gen, vehicles, oil/gas drilling?
- Preferences re: vehicle ownership, ridesharing, public transport
- Risk of future oil supply disruptions?
- Relationship between economic growth & energy demand?

Specific thoughts on modeling impact of climate policy

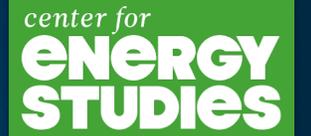
- Document (and publish?) policy assumptions by country/region
 - ...and ensure consistency across sectors
- Be clear on aspirations vs revealed behavior
- Greater focus on domestic energy/supply chains?
- Interplay of policy, technology, behavior/preferences
- Feedbacks of climate change on energy demand, economic growth?
 - Temperature, storm frequency/intensity, drought etc

Specific thoughts on modeling impact of climate policy (con't)

How to analyze industry decision-making?

- Project economics
- Impact of uncertainty
 - Policy, technology, economics, customer preference etc
- Value chain (eg for oil: production, transport, trading, refining, distribution)
- National investment regime: Private vs state companies, etc
- Weight of ESG themes
- Consumer, investor, other stakeholder behaviors & preferences

Thank you!



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