Databases and Modeling

2020 Internship Showcase

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Relational Databases and Economic Modeling Projects

- UpdateTracker
  - This is a front-end Web application with a back-end relational database to manage data records and dynamic visualization.
- U.S. Energy Information Administration (EIA) and Annual Energy Outlook (AEO)
  - Models that want to use EIA and AEO data to compare model output use the online Application Programming Interface (API). No publicly available databases exist.

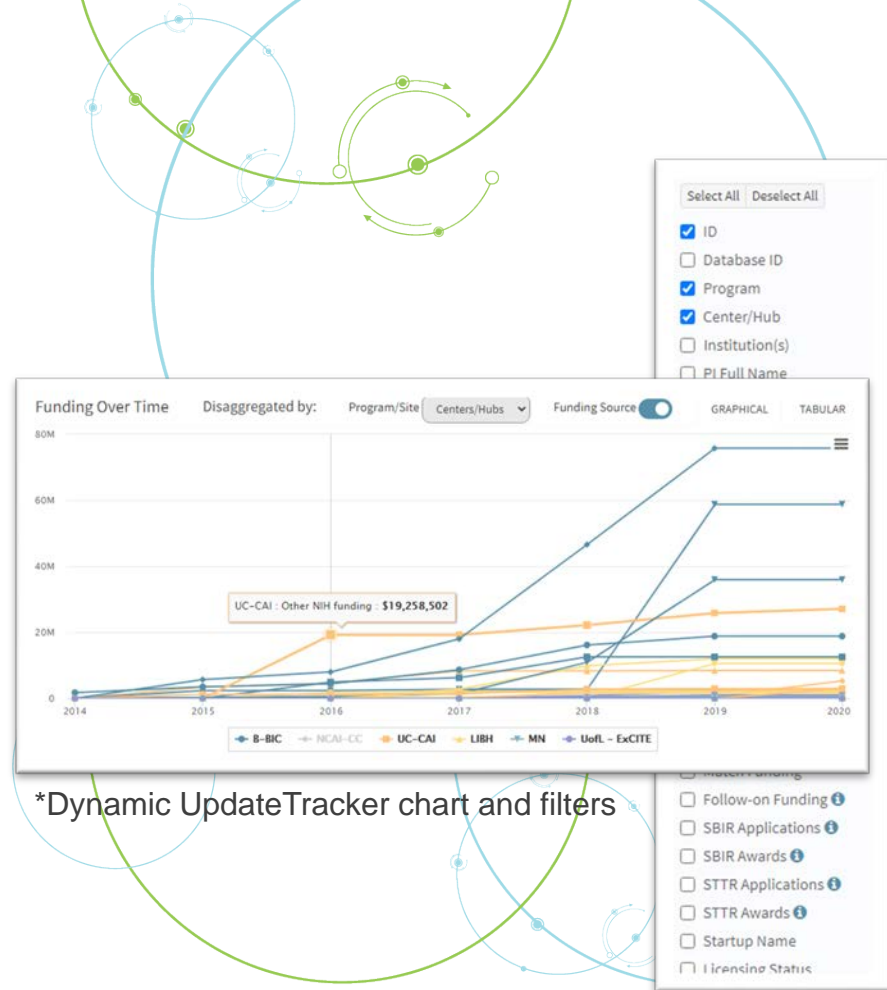# Relational Database Benefits—
A Powerful Infrastructure

Increased data portability

Dynamic data access

Additional benefits

*Dynamic UpdateTracker chart and filters
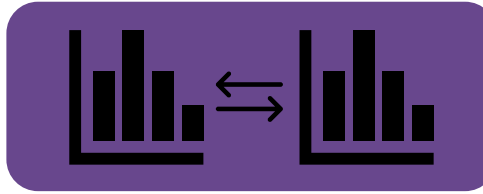
Economic Modeling Needs
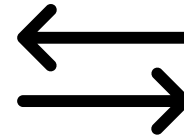

Input data

Emissions|CO_2|Fossil Fuels|Electricity|Other

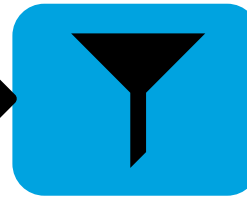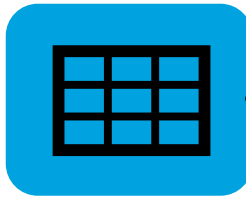Carbon Dioxide : Electric Power : Other, United States, Reference, AEO2020

Inconsistent intermodel variables

Model results

Intramodel comparison

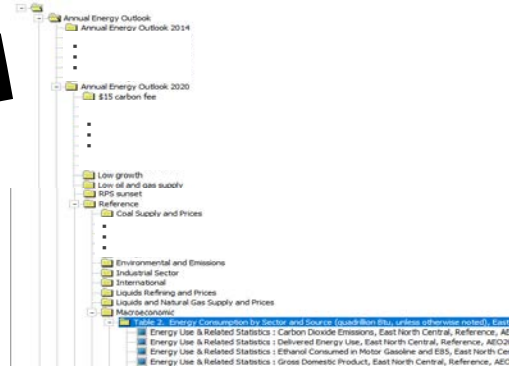Intermodel comparison

Dynamic visualization

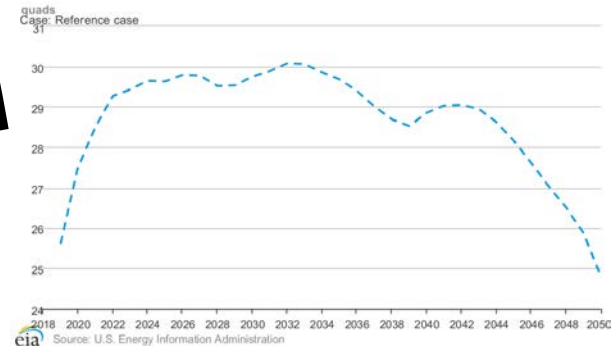# The Database Solution

o Organize data into relational structure.

o Relational structure allows consistency and eases model comparisons.

o It also provides foundation for data analysis, visualization, and user interface.

*High-level relational structure from EIA AEO project

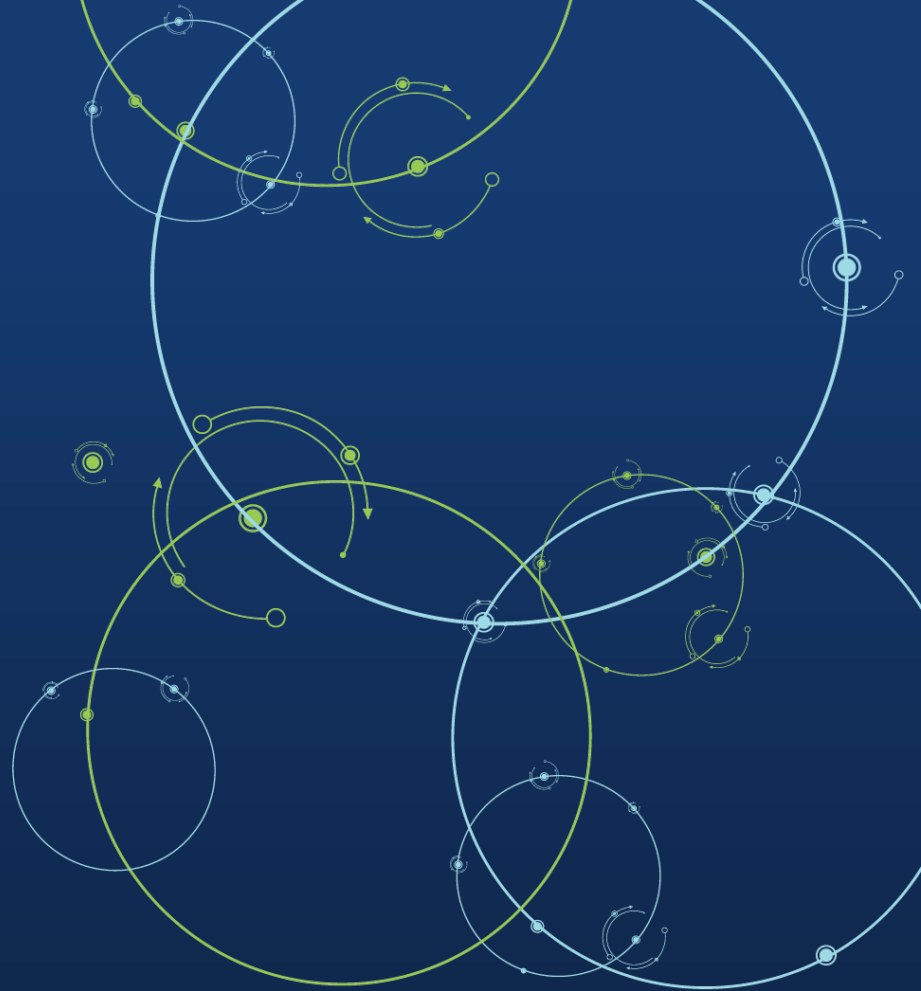Source: 2019: U.S. Energy Information Administration (EIA)

Acknowledgments

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o National Institutes of Health

Acknowledgments (continued)

o RTI International

- University Collaboration Office

- Multimedia Communication Services

- Office of Intellectual Property

Thank you

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