



# Advanced Technology for Renewable Transportation Fuels

CEC Bioenergy Action Plan  
Workshop – Sacramento, CA



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# Global Energy Perspectives

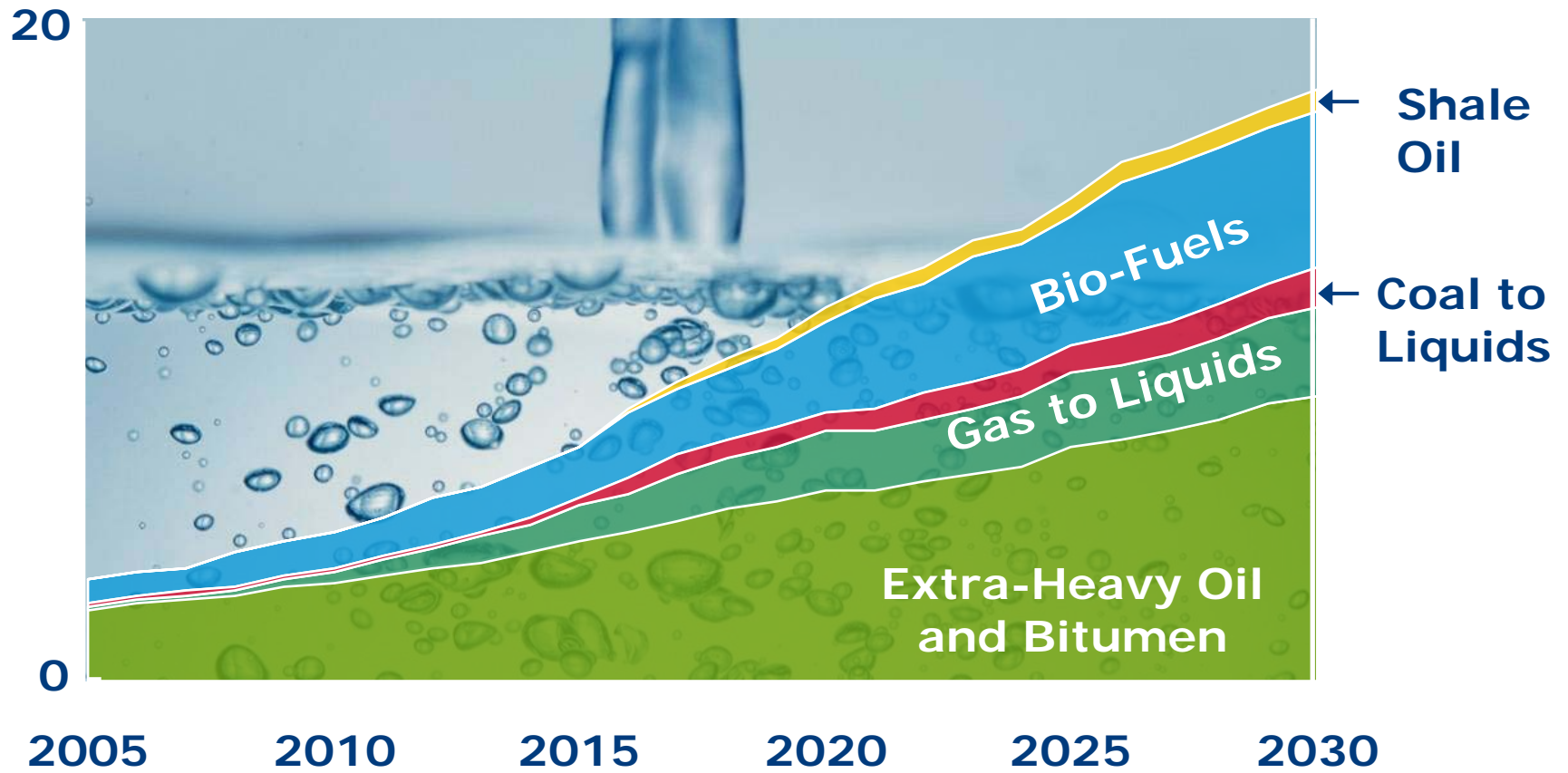
- Growing global energy demand
  - Increasing competition and investments for resources
  - Increasing demand for cleaner fuels and technologies
  - Increasing expectations surrounding climate change
  - Increasing expectations surrounding security / diversity of energy supply
- Need to:
    - Improve energy efficiency
    - Develop unconventional sources of energy
    - Reduce environmental footprint of all energy sources
    - Develop renewable, sustainable energy sources
    - Avoid excessive competition with food & feed



# Diversification of Feedstock and Fuel

How big will it be? What will it be and by when?

MMBD



# Chevron – “GEN 1” Biofuels

- Ethanol blender for many years in California & elsewhere
- Part-owner of Galveston Bay Biodiesel in Texas
- Ongoing E85 Study with CEC, GM, and Pacific Ethanol in California
- Optimization of corn-based ethanol plants via *Chevron Energy Solutions*
- Design & construction of corn-based ethanol plants in cooperation with Ethanex, Inc.



# Chevron – “GEN 2” Biofuels



## ■ Vigorous internal and external R&D programs:

- Advanced Feedstocks
- Processing Technology
- Product Technology & Testing

## ■ Internal:

- Richmond, CA
- Houston, TX

## ■ Universities & Labs:

- UC-Davis
- NREL
- Georgia Tech
- Texas A&M

## ■ Other Companies:

- Weyerhaeuser



# Biofuels Impact can be BIG! (Soybean Harvesting & Corn Planting)

