

Carson Hydrogen Power Sponsors and Key Participants

bp

EDISON MISSION ENERGY
An EDISON INTERNATIONAL Company

FLUOR

GE

OXY

URS

West Basin
MUNICIPAL WATER DISTRICT

BP Alternative Energy

- Global leader in decarbonized fuels projects, including gasification projects and GHG sequestration

Edison Mission Energy

- Pioneer in first-of-kind IGCC (120 MW Cool Water and 528 MW ISAB in Italy)
- Leading developer of independent power (coal, gas, renewables)

Fluor

- One of the world's largest publicly-held EPC contractors
- Leader in the design of clean coal, carbon capture, power generation facilities

GE Energy

- Leading Provider of IGCC Technology and Equipment and Supporting Services

Occidental Petroleum

- World's largest CO₂ EOR operator

URS

- Renowned leader in the permitting of IGCC power plants; Respected technical expertise and successful relationships with CEC, EPA and SCAQMD.

West Basin Water District

- Nationally recognized industrial water recycler

2

Project Goals and Strategy



Project Goals

- Convert a low grade refinery byproduct (petroleum coke) to low-carbon electricity and carbon-free fuels for the Los Angeles Basin.
- Utilize CO₂ for enhanced oil recovery and permanently sequester it.
- Enable commercial and establish regulatory mechanisms for CO₂ EOR and Sequestration in California.

Global Strategy

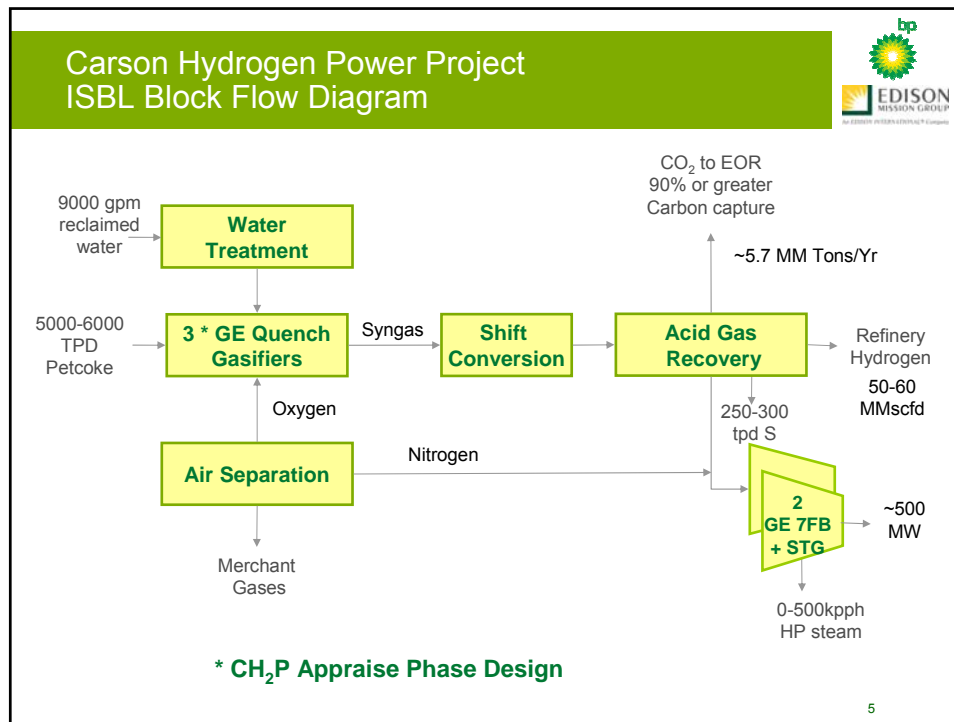
- Demonstrate commercial application of technologies for clean energy production and reducing greenhouse gas emissions, such as CO₂.
- Establish platform for future a hydrogen-based economy.
- Integrate and commercialize cutting edge technologies for gasification, hydrogen fuel turbines, carbon capture and sequestration methodologies consistent with California and Federal DOE goals.
- Establish Technical, Environmental, and Commercial Basis to replicate CH₂P in US and Abroad

3

Carson Hydrogen Power Plant



4



Why Carson, California?

- Site of existing BP Carson Refinery and Watson Cogeneration
 - (JV BP and EME)
- Need for low-carbon power near major load centers.
- Need for refinery hydrogen and steam to produce clean transport fuels.
- Local need for CO₂ in Enhanced Oil Recovery (EOR) operations.
- Significant supply of local supply of fuel grade coke.
- Significant supply of recycled industrial water .
- Located near industrial gas plants (oxygen, nitrogen, hydrogen).
- Strong local and state support (CEC one stop permitting).
- Consistent with Nat'l Energy Policy Act of 2005 and California GHG Policy.

“This is the right project, in the right place, at the right time” Governor
Arnold Schwarzenegger, February, 2006



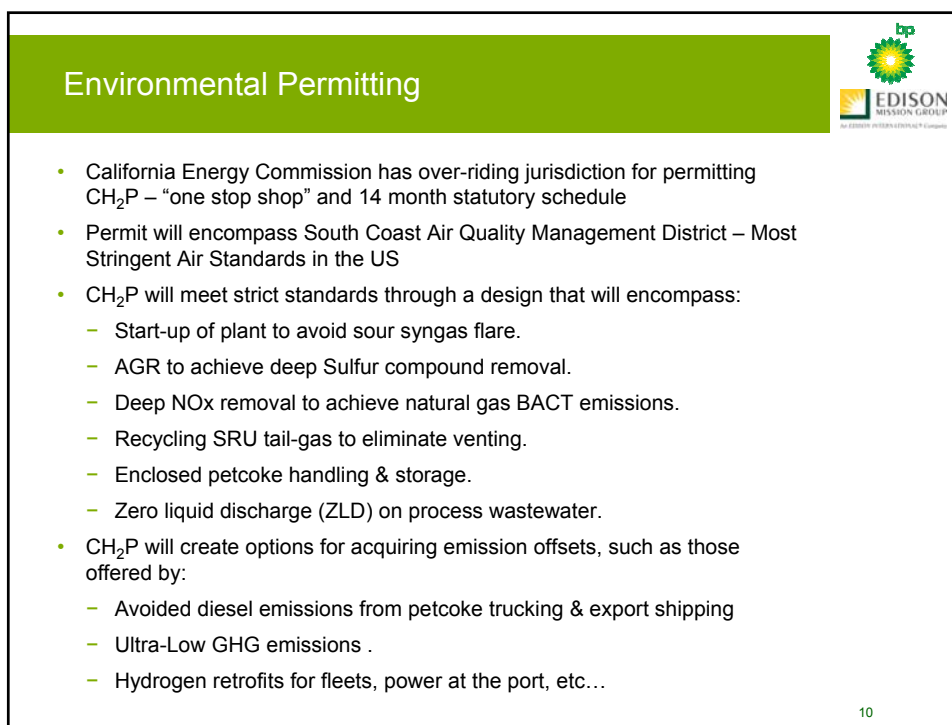
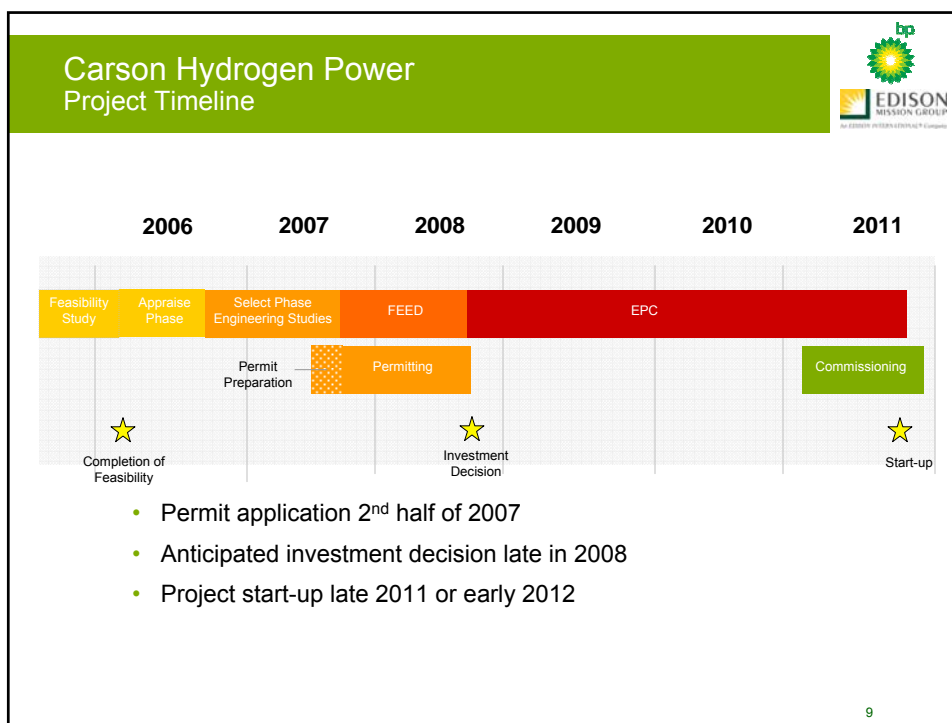
Captured CO₂ will enable enhanced oil recovery from California's mature oil fields



Figure 2. Major California Oil Basins



- California offers over 1 billion tonnes of CO₂ storage capacity and approx 57 billion barrels of 'stranded oil resource' (DOE 2005)
- CO₂ EOR operations will yield 5-10%+ of incremental oil production
- Studies are underway to determine which California oil fields are most attractive for CO₂ flooding technology
- Our studies include:
 - Tertiary recovery potential
 - Site assessment for sequestration
 - Evaluating monitoring techniques
 - Feasibility of pipeline routes,



Carson Hydrogen Power

Benefits of CH₂P



- Adds to National Energy Security by demonstrating use of under-utilized petcoke from domestic heavy crude to generate clean power and fuels.
 - Enabling now-exported low cost pet coke to generate low carbon power and mitigate offshore GHG emissions.
 - Reducing the volume of natural gas imported to the US.
- Injection & Sequestration of CO₂ could support recovery of up to 5 Billion bbls of domestic oil classified as uneconomic “stranded reserves” .
- CH₂P’s success will stimulate investment in comparable facilities, domestically and globally, utilizing coal and petcoke.
- Industrial competitiveness of US companies to export low carbon energy technology to developing countries.
- Producing hydrogen & other products for use.
- Eliminating the emission of 240 million tons of GHG from the atmosphere.

11

Benefits to California and the Environment



- Providing 500 MW of new, clean generating capacity
 - when state agencies are predicting possible shortages (~7%) in coming years
- Eliminating ~5.7 million tons/yr of CO₂ from the atmosphere
 - by sequestering them underground
- Producing additional energy from existing California oil fields
 - by injecting CO₂ to force 5% to 10%+ more oil to the surface
- Boosting the Southern California economy
 - 1,000 construction jobs and 150 permanent operational positions
- Reducing stress on US natural gas supplies
 - by using a by-product left over from the oil refining process
- Preserving limited fresh water sources
 - by using recycled and treated city waste water for plant needs
- Building a hydrogen source for other future uses & other gasification by-products
- Reduced emissions from petroleum coke transportation - currently exporting to China
 - Eliminate 3000 truck miles/day from refineries to port
 - Eliminates corresponding marine transportation emissions

12

State and Local Outreach – Near Term



- Governor Arnold Schwarzenegger
- EPA Region IX Director Staff
- California Energy Commissioners & Siting Staff
- California Public Utilities Commission
- West Basin Municipal Water District
- California EPA & CARB
- South Coast Air Quality Management District
- City of Carson
- Carson Redevelopment Agency
- Carson Homeowners Association
- Mayor of Los Angeles
- State Lands Commission
- City of Long Beach
- Port of Long Beach
- Community and eNGO outreach ramping up 2006 and beyond.
 - eNGOs – Broad
 - eNGOs – Southern California
 - Local Community Leaders
- The eNGO community has also been engaged by BP, with a number of project briefings and a 1-day carbon capture and storage workshop.
- Ongoing Community Programs: BP's EJ Workgroup; A+ for Energy
- CHP Outreach Consulting Team:
 - Greer/Minter/Dailey
 - Gladstein & Neandross
 - Diversified Strategies for Organizing