

# Energy Career and Leadership Webinar Series – Spring 2024

## Navigating a Successful Career in a Changing Energy Industry

**TIEEP**

TEXAS INDUSTRIAL ENERGY  
EFFICIENCY PROGRAM

This webinar will be recorded.



UH Energy

UNIVERSITY OF HOUSTON



UNIVERSITY of HOUSTON | UH ENERGY



# Navigating a Successful Career in a Changing Energy Industry



## Alan Rossiter

Executive Director, External  
Relations & Educational Program  
Development

*UH Energy, University of Houston*

# Navigating a Successful Career in a Changing Energy Industry

## Confirmed Presenters



**Rey Banatao, Ph.D.** Director / Project Lead, X (formerly Google X)

Presentation Topic: Fall in Love with the Problem - Lessons in Moonshot Taking, Climate and Entrepreneurship

**Don Victory.** Founder and Chair of Energy Mentors; previously Upstream Chief Process Engineer at ExxonMobil

Presentation Topic: Defeating Career Anxiety



**Sharon Nolen.** Eastman Fellow; leader of Eastman's Global Natural Resource Management program.

Presentation Topic: From Raising Cows to Removing Carbon: A Personal Sustainability Journey

**Jane Stricker.** SVP and Executive Director, Houston Energy Transition Initiative (HETI), The Greater Houston Partnership.

Presentation Topic: Navigating a Successful Career in a Changing



Energy Industry

Dates: **Fridays February 9 - March 29, 2024 (excluding March 8 & 15)**

Time: **10am - 11am**

Location: **Webinar Series**

**Sindhu Balan.** Investment principal, Chevron Technology Ventures (CTV).

Presentation Topic: Many Routes to a Career Destination

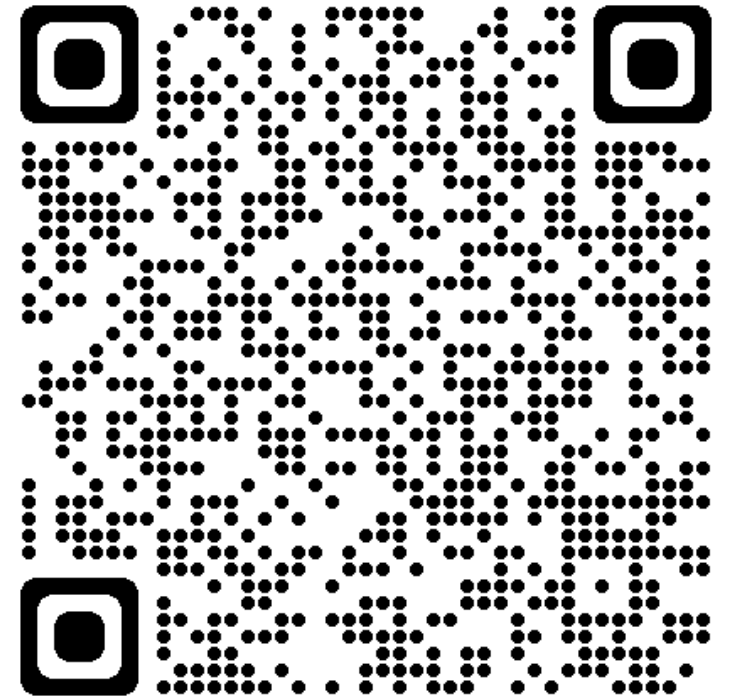


**Additional Presenters to be announced soon.**

## Notes for Certificate Candidates

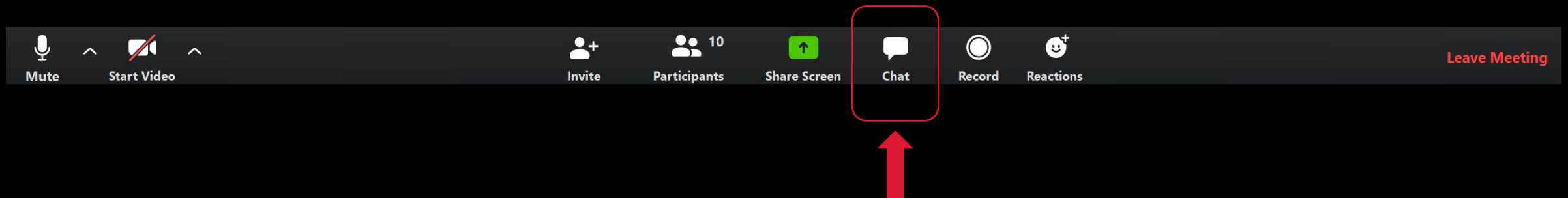
Open to students enrolled students at institutions of higher education. Registration must include institution & student ID.

1. Use your unique, personal Zoom link for the webinars.
2. Activate course in Canvas.
3. Participate in at least 4 webinars in real time.
4. Limited waivers available to use recordings. Must be requested in advance.
5. Complete each test by 11:59 pm the Thursday after the webinar. Passing grade: 80%



# Navigating a Successful Career in a Changing Energy Industry

Please stay muted with video off.  
Submit your questions for our guest  
speaker during the live Q&A using the  
chat function in Zoom



# Navigating a Successful Career in a Changing Energy Industry

## Today's Moderator

**Fatemeh Loripour**

Vice Chair-Operations | **UH Energy Coalition**

Graduate student | Bauer College of Business



# Navigating a Successful Career in a Changing Energy Industry

## OUR STORY

### THE LARGEST ENERGY-FOCUSED STUDENT ORGANIZATION IN THE U.S.

8

COLLEGES

34

STUDENT ORGANIZATIONS

30

MAJORS



# Navigating a Successful Career in a Changing Energy Industry

## Upcoming Events

- Networking Event with Energy Professionals
- Career Readiness Sessions
- Crawfish Boil
- Hydrogen Symposium
- Banquet





# Navigating a Successful Career in a Changing Energy Industry



**Jane Stricker**

SVP and Executive Director, Houston Energy  
Transition Initiative (HETI)

*The Greater Houston Partnership*

# The Greater Houston Partnership and HETI



**GREATER HOUSTON PARTNERSHIP**  
**Making Houston Greater**

The Partnership is the principal business organization and the largest regional chamber of commerce in greater Houston, serving as a gathering place for community-minded business leaders who want to make a lasting impact on the region.

Advisory Board



**GREATER HOUSTON PARTNERSHIP**

**HOUSTON ENERGY TRANSITION INITIATIVE**

### Steering Committee

Chair: Bobby Tudor, Vice Chair: Scott Nyquist  
Executive Director: Jane Stricker

### Working Groups & Initiatives

CCUS	Decarbonization of Industrial Assets	Clean Hydrogen <sup>a</sup>	Power Management
Capital Formation	Talent & Workforce	Equity & Engagement	Technology & Innovation

**Support from McKinsey & Co, RMI, MPP, Accenture**

# Navigating a Successful Career in a Changing Energy Industry

## FOUR KEY THOUGHTS

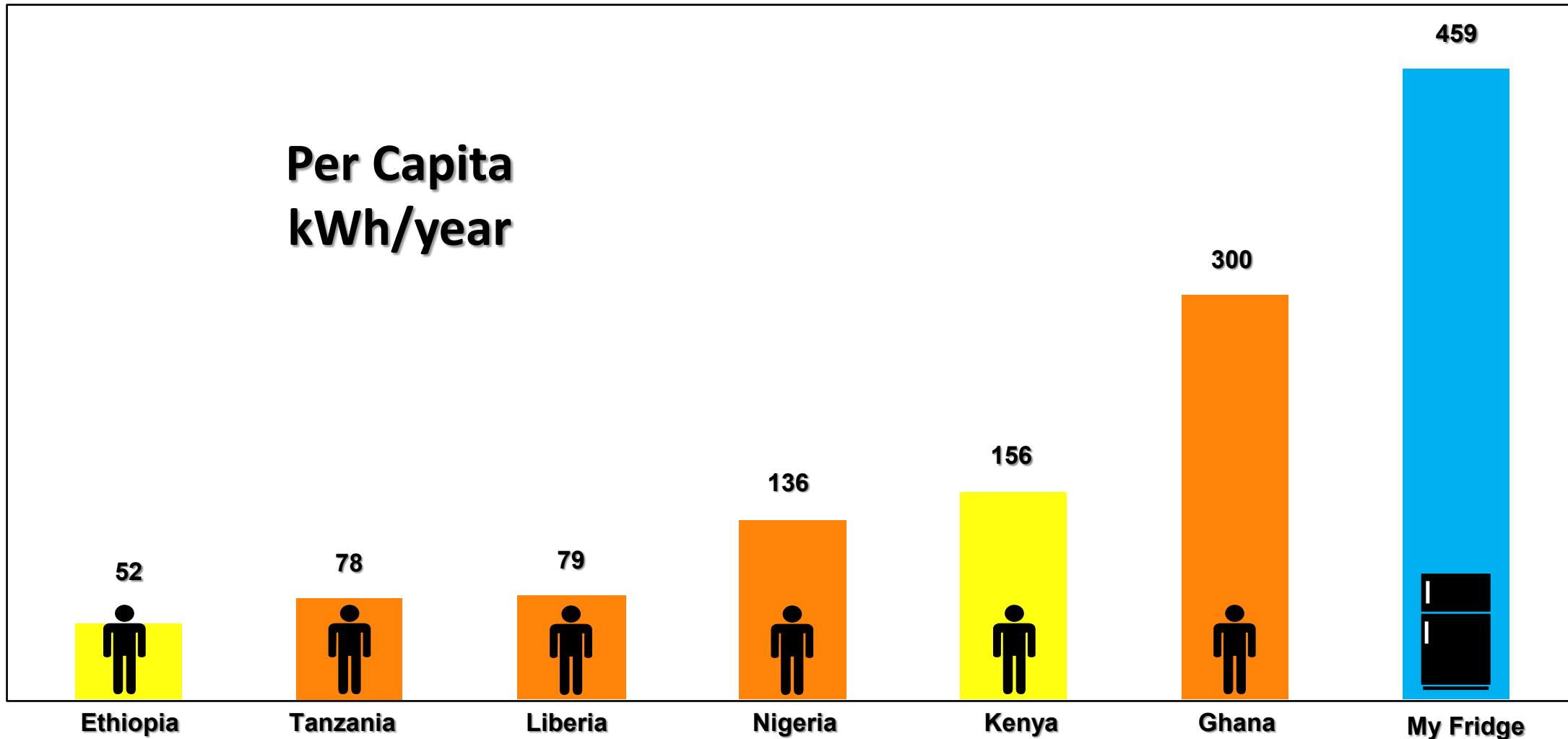
1. We are facing a **dual challenge** – the world needs significantly more energy while also significantly reducing CO2 emissions
2. Our energy sector must continue to **evolve** to meet the needs of a rapidly changing world
3. The successful transition to an energy-abundant, low-carbon world requires **innovation**
4. A successful career in a changing energy industry requires **adaptability**



# The Dual Challenge

The world will require significantly more energy to meet growing global demand – but, simultaneously, we must significantly reduce the CO<sub>2</sub> emissions related to energy production and use to mitigate the worst impacts of climate change.

Today : >60% of the world's population lives in some level of energy poverty

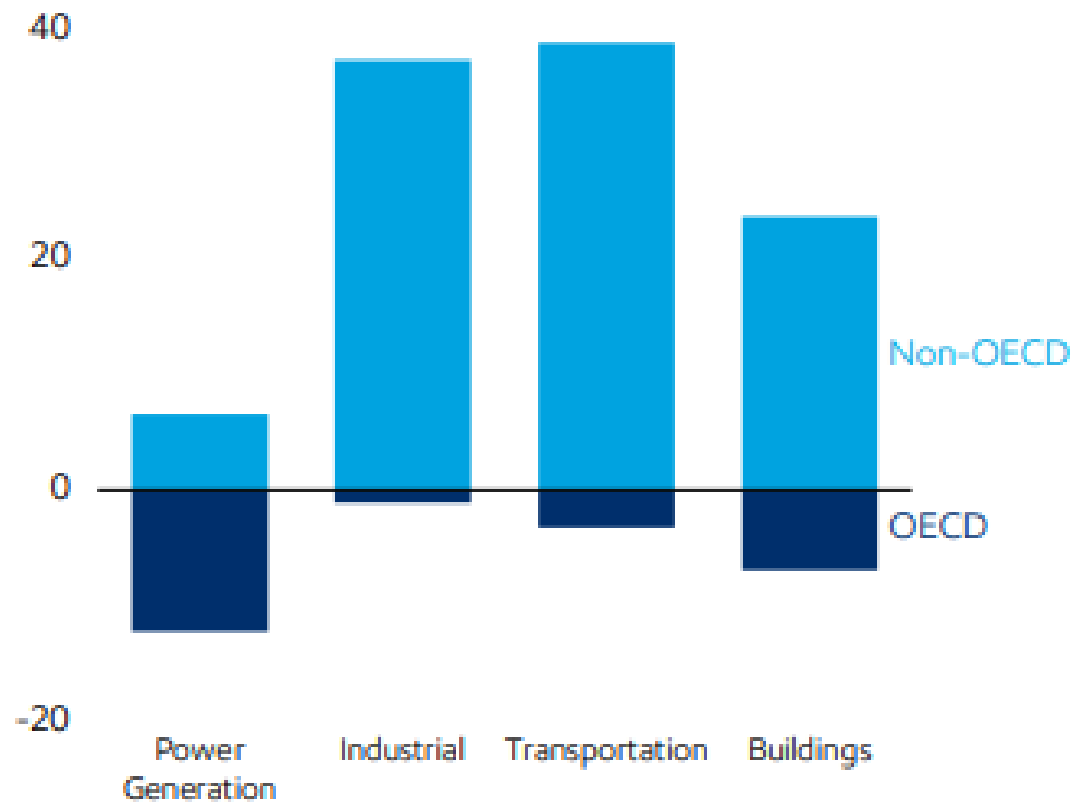


Source: IEA, 2010; Tinker 2023

# Increasing population and improved quality of life will drive demand

## Global energy growth, 2021-2050

Quadrillion Btu



Global population grows by 2bn people (25%)

Developing regions require energy to unlock prosperity

Developed regions have declining energy use – driven by declining population, efficiencies

# As a result, the global energy mix will change and grow



5X greater use of wind & solar energy forecasted



The world still needs both electrons & molecules

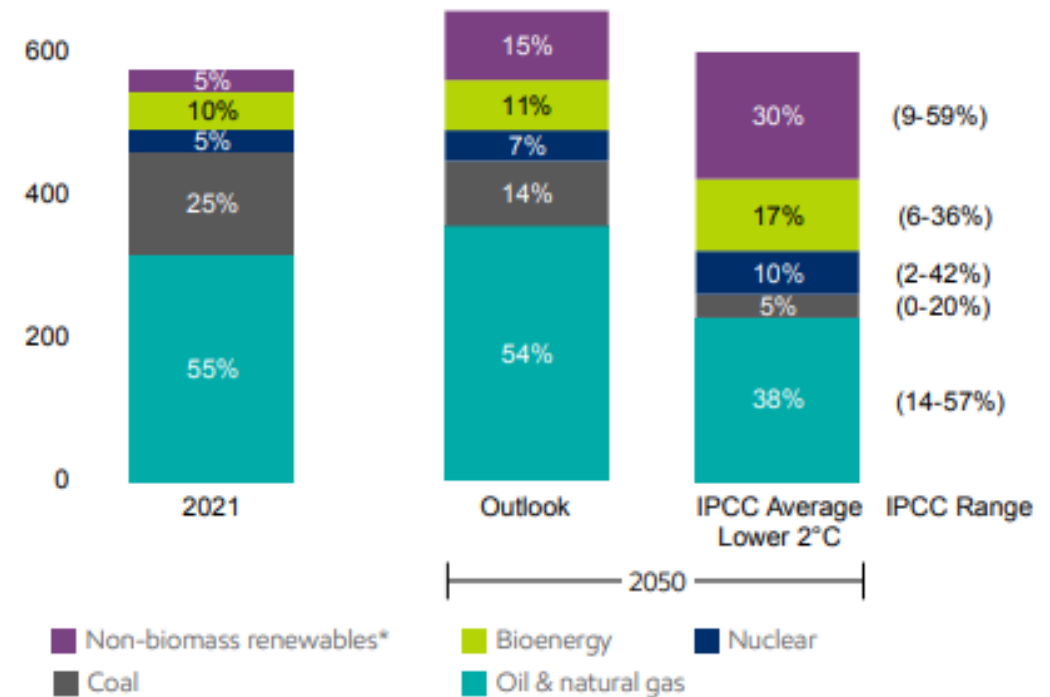


Hydrogen & modern biofuels help decarbonize the energy mix

## Global energy mix

Quadrillion Btu

800



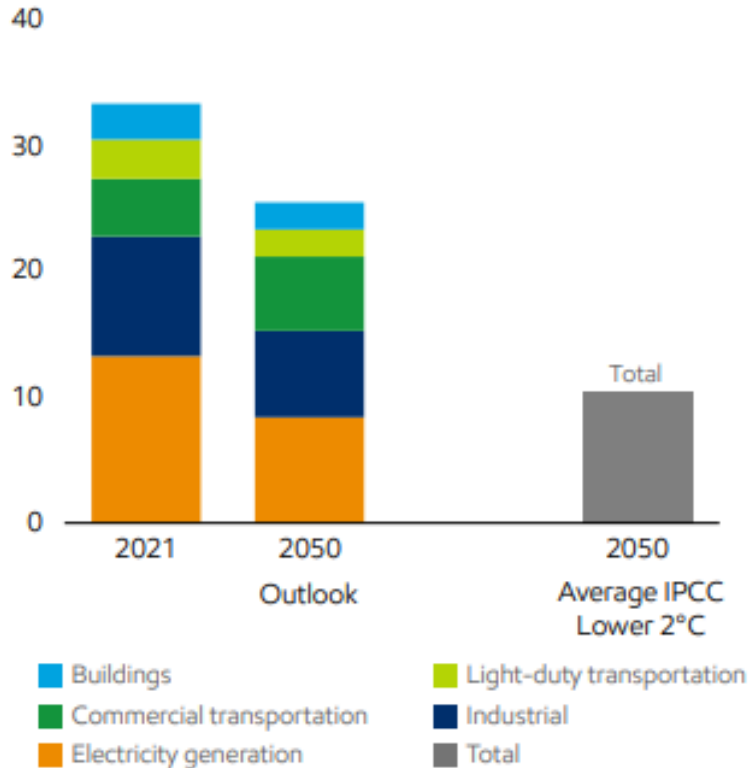
\* Includes hydro, wind, solar, and geothermal

Source: IPCC: AR6 Scenarios Database hosted by IIASA release 1.0 average IPCC C3: "Likely below 2°C" scenarios; ExxonMobil analysis

# Emissions decline, but its likely not enough

## Energy-related emissions

CO<sub>2</sub> Billion metric tons

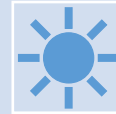


Source: IPCC: AR6 Scenarios Database hosted by IIASA release 1.0 average IPCC C3: "Likely below 2°C" scenarios; ExxonMobil analysis

Emissions do not contain industry process emissions or land use and natural sinks



Given **existing technologies**, the ExxonMobil outlook forecasts a 25% reduction in emissions by 2050.



Growth in electrification and renewables is only part of the solution.



Further **innovation and development of new technologies** and solutions is needed to achieve deep decarbonization goals.



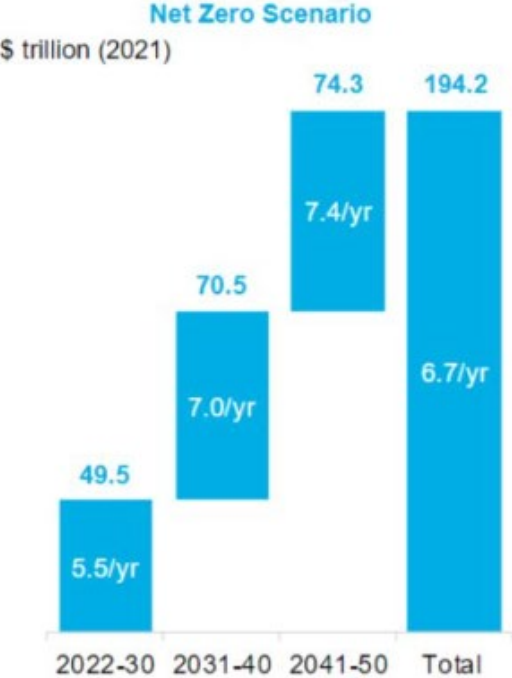
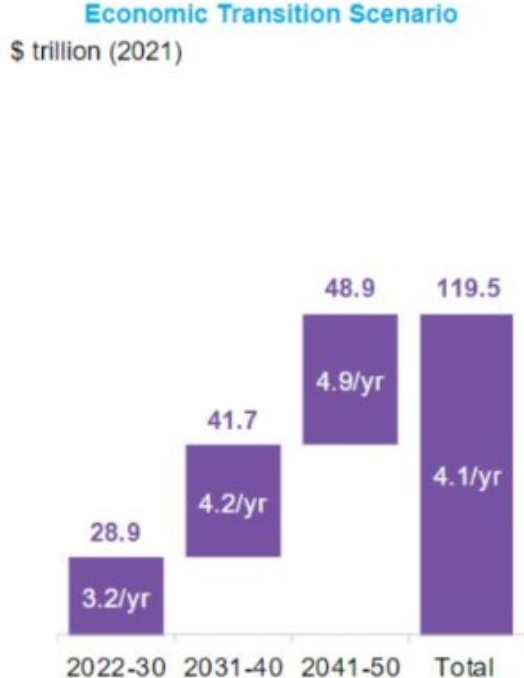


# Energy must evolve

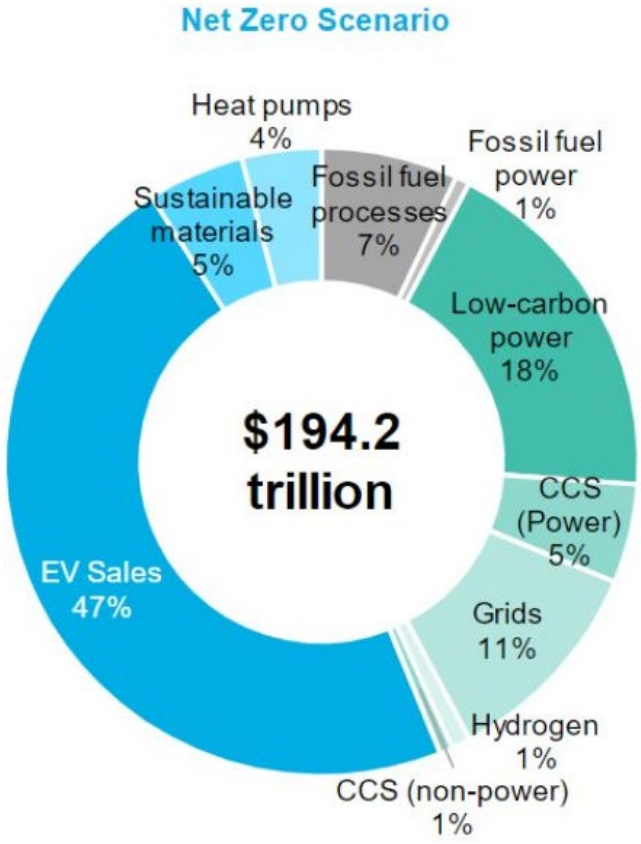
Our energy sector must continue to evolve to meet the needs of a rapidly changing world

# Between \$4-7 trillion needed annually to achieve net zero

## Global investment needed



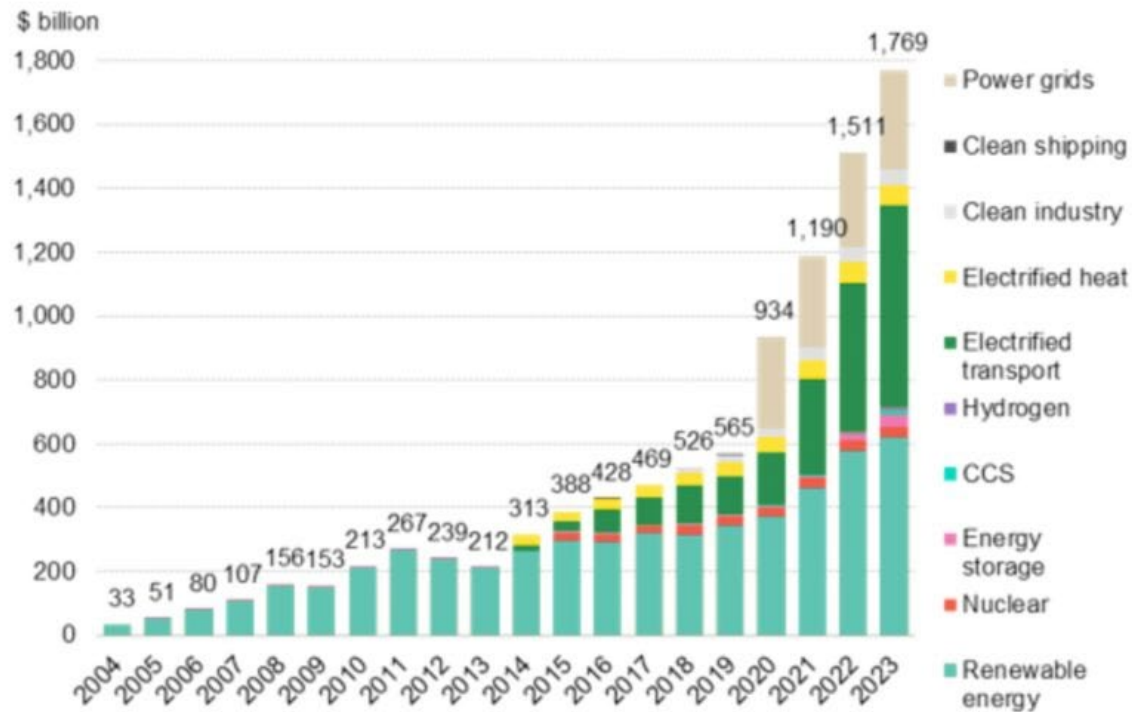
## Global investment needed for net-zero goal



Source: BloombergNEF, Dec. 2022

# 2023 saw record \$1.8 trillion of investment

## Global energy transition investment by sector



Source: BloombergNEF. Note: start-years differ by sector, but all sectors are present from 2020 onwards; see Methodology in the report for more detail. Most notably, nuclear figures start in 2015 and power grids in 2020. CCS refers to carbon capture and storage



Venture capital saw \$24bn in energy startups across all technology areas



Electrified transport was the largest sector for spend.



US share of investment for 2023 was \$303bn.

Source: BloombergNEF, Jan. 2024

# All energy companies must play a role in the transition



## INCUMBENT ENERGY FIRMS

actively decarbonizing their own operations



## RENEWABLE COMPANIES

with established and growing presence in Texas



## MAJOR INTEGRATED ENERGY FIRMS

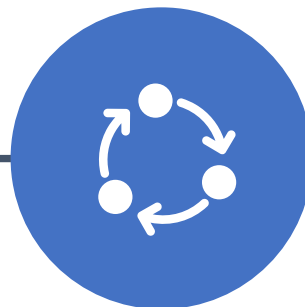
investing significant capital into new, low-carbon businesses



## NEW ENERGY FIRMS

bringing new technologies and solutions, backed by venture capital / private equity

SUPPLY CHAIN COMPANIES



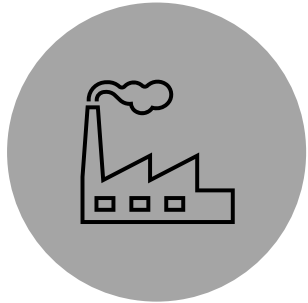
SERVICE COMPANIES



# Innovation is key

The successful transition to a low-carbon, energy abundant future requires innovation.

# Technological innovation



## DECARBONIZATION

CCUS  
Clean Hydrogen  
Methane reduction  
E-fuels  
SAF



## EFFICIENCY

Digital  
Artificial  
Intelligence  
Internet of things  
Blockchain  
Waste to energy



## ENERGY STORAGE

Utility scale batteries  
Distributed power  
plants



## ELECTRIFICATION

Electricity replaces  
molecules; EVs,  
renewables –  
geothermal, wind,  
solar

# Business model innovation



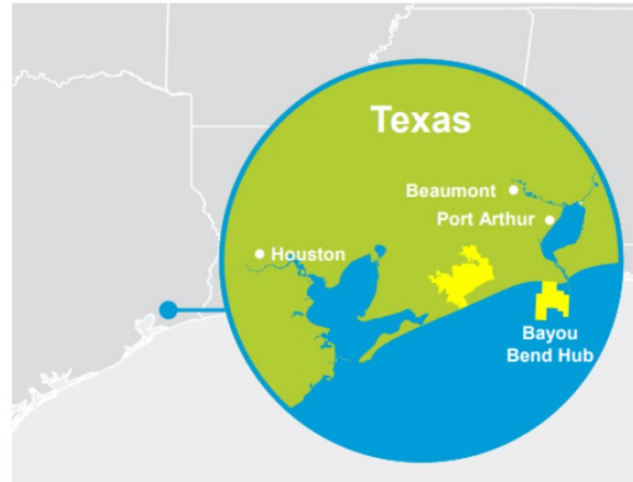
## chevron announces investment in carbon clean CO2 capture technology business



bp & Linde plan major CCS project to advance decarbonization efforts across Texas Gulf Coast

4 energy companies join forces on low-carbon ammonia project on the Houston Ship Channel

Geothermal from the Perspective of the Offtaker - Exploring the Partnership Between Google and Fervo Energy



# Investment innovation



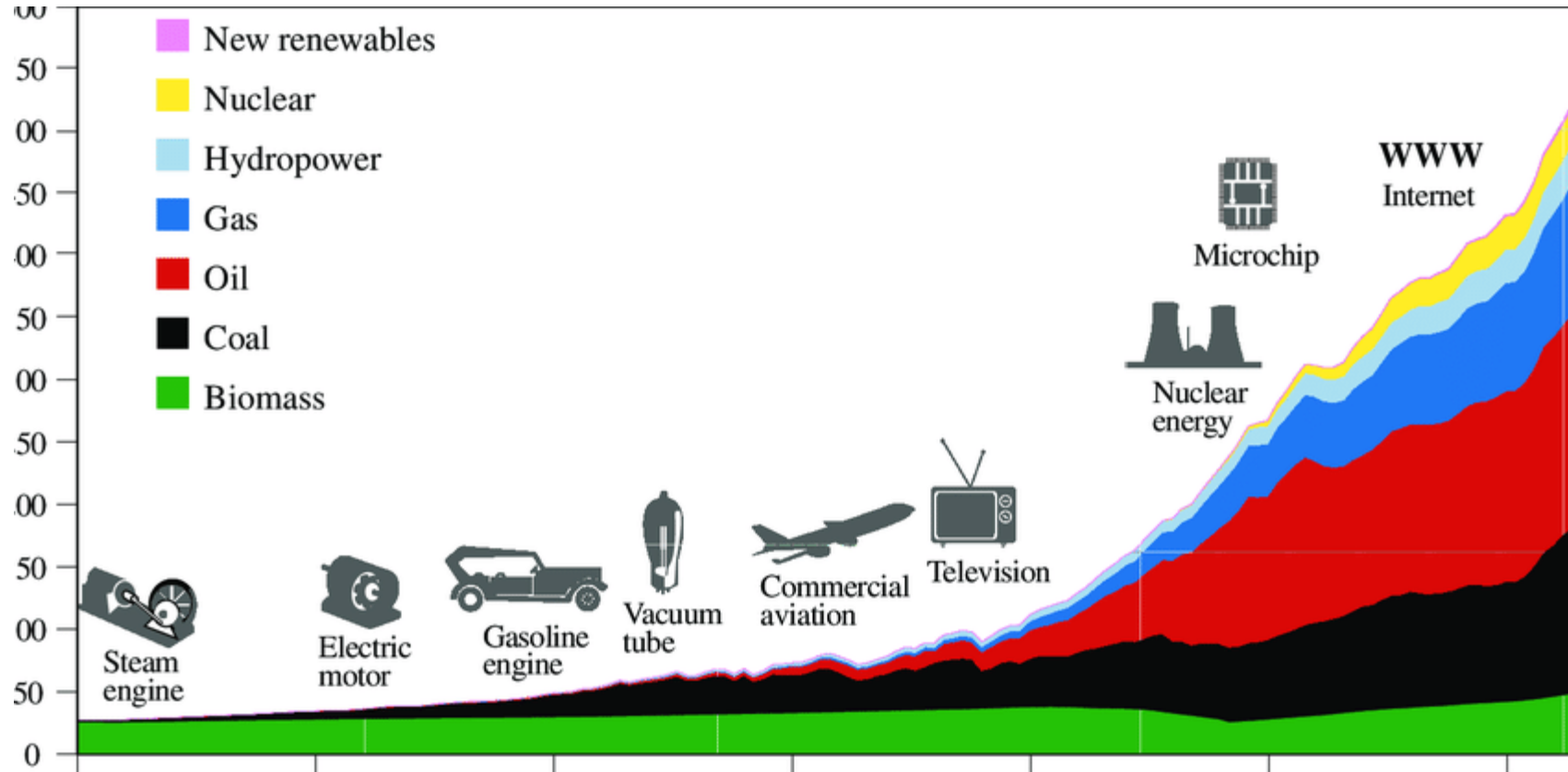




# Adaptability

In the same way the energy industry continues to adapt to meet the needs of a changing world, a successful career in that industry requires that we adapt to access evolving opportunities.

# As technology evolves, so does our energy system



History of world primary energy use, by Source (in EJ). Source: updated from Nakicenovic et al., 1998 and Grubler, 2008 .

# Adaptability

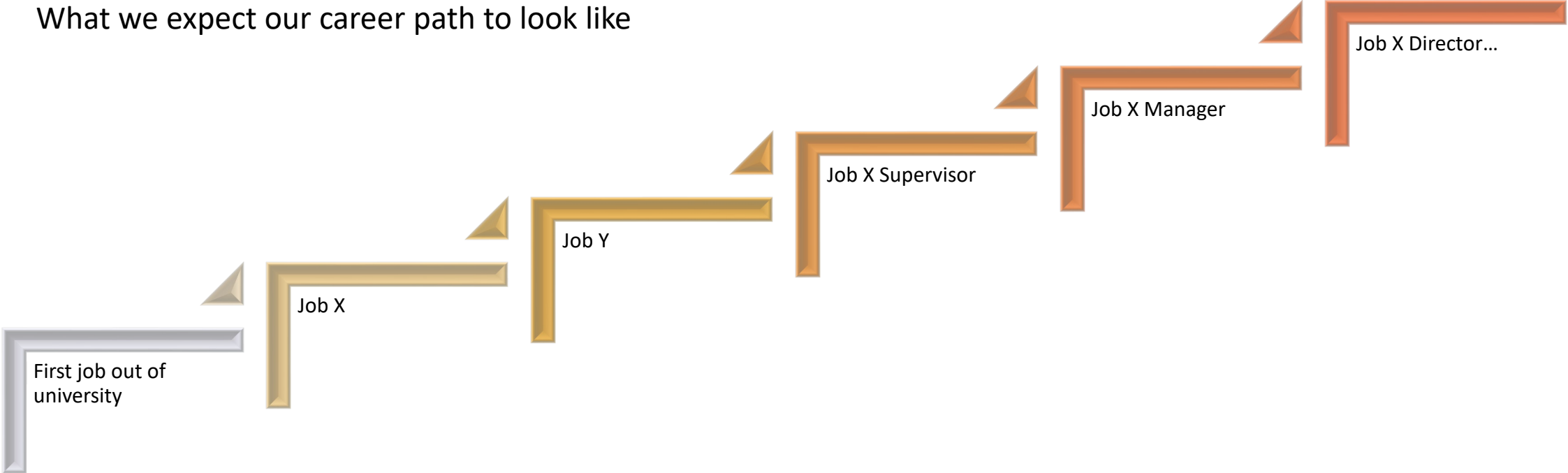


## *noun*

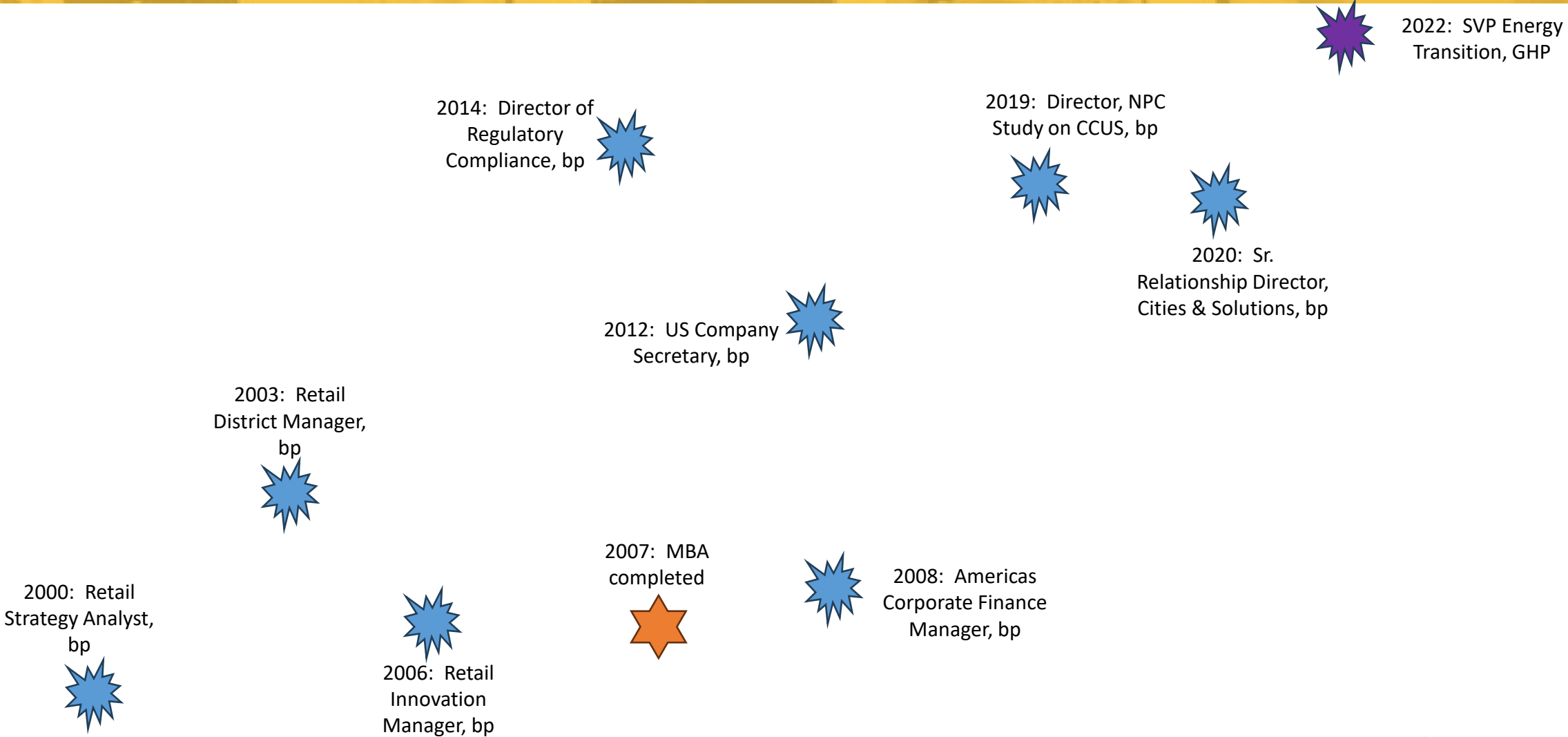
- an ability or willingness to change in order to suit new conditions
- the capacity to be modified for a new use or purpose

# Career Path - expectation

What we expect our career path to look like



# Career Path – another view



# Adaptability requires a growth mindset

**A dynamic and successful career in the energy industry requires:**

- 1. Clear set of values**
- 2. Core set of capabilities**
- 3. Desire to learn new things and try different roles**
- 4. Willingness to ask questions, make mistakes, and occasionally fail**
- 5. Ability to build strong relationships and seek out great mentors**

# Final thoughts

***Success can be found at the intersection of what you are good at, and what you love to do.***

**Figure out what you do well**

**Understand what drives you**