Subcommittee on Identification of CCUS Priority Pipelines – Plan and Progress

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Clean Air Task Force

Presentation to the CCUS Permitting Task Forces

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Statutory Charge

USE IT Act Duty V

- Identify any priority CO_2 pipelines needed to enable efficient, orderly, and responsible development of CCUS projects at increased scale

Subgroup Approach

Define Priority Pipeline

What's a Priority Pipeline?

- Near-term priorities
- Long-term scaling needs

Prepare Selection Criteria Matrix

What is the basis for a recommended pipeline?

- Sources
- Sinks
- Pathways

Use Criteria to Explain Selection

What are we recommending?

- Criteria?
- Corridor?
- Pipelines?

Selection Criteria Matrix

Sources

- Type of source (e.g., ethanol, coal-fired power plant, cement)
- Age
- Cost to capture emissions from source
- Size of source (e.g., tons emitted per year)
- Distance from adequate storage sinks (“stranded sources”)
- Geographical limitations (e.g., Appalachian Mountains acting as a physical barrier between the source and its nearest sink)
- Geographic/physical reason for locations (i.e. barged coal – reason for river valley plant locations; mountain and coast bounded plant locations; plants along existing rail lines); allows for geographic collection of CO_2 into potential pipeline.
- Assumed retirement date
- Proximity to other sources
- Environmental justice considerations (e.g., disadvantaged communities)
- DOE-funded project (e.g., component of a DAC hub)

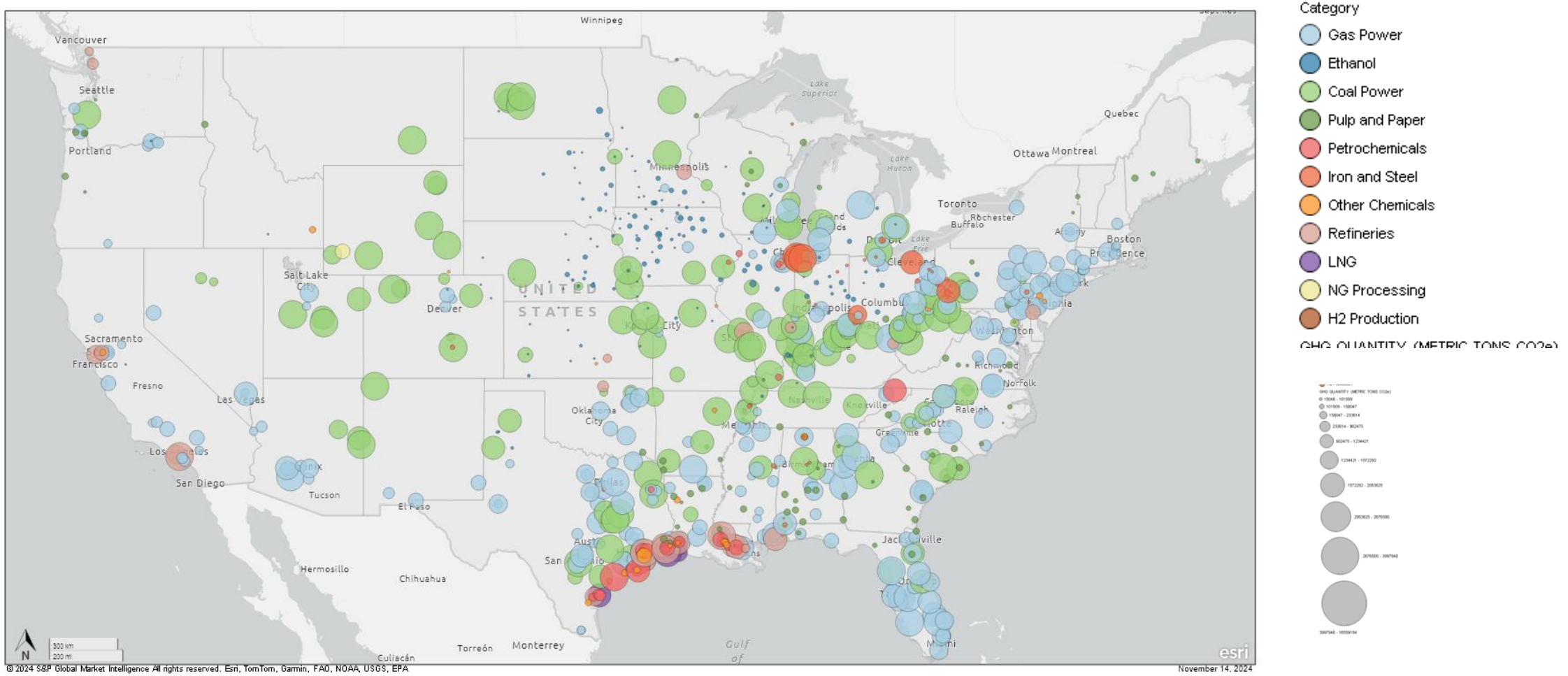
Selection Criteria Matrix: Sinks

- Proximity to population centers
- Distance from nearest sources
- Size
- Extent of competition for the source based on other uses (e.g., geothermal, hydrocarbon extraction, hydrogen storage)
- Pre-existing infrastructure on site
- Environmental justice considerations (e.g., disadvantaged communities)
- Environmental sensitivities
- Risk of geohazards
- Type (e.g., saline aquifer, depleted gas field)
- Capacity, injectivity, porosity

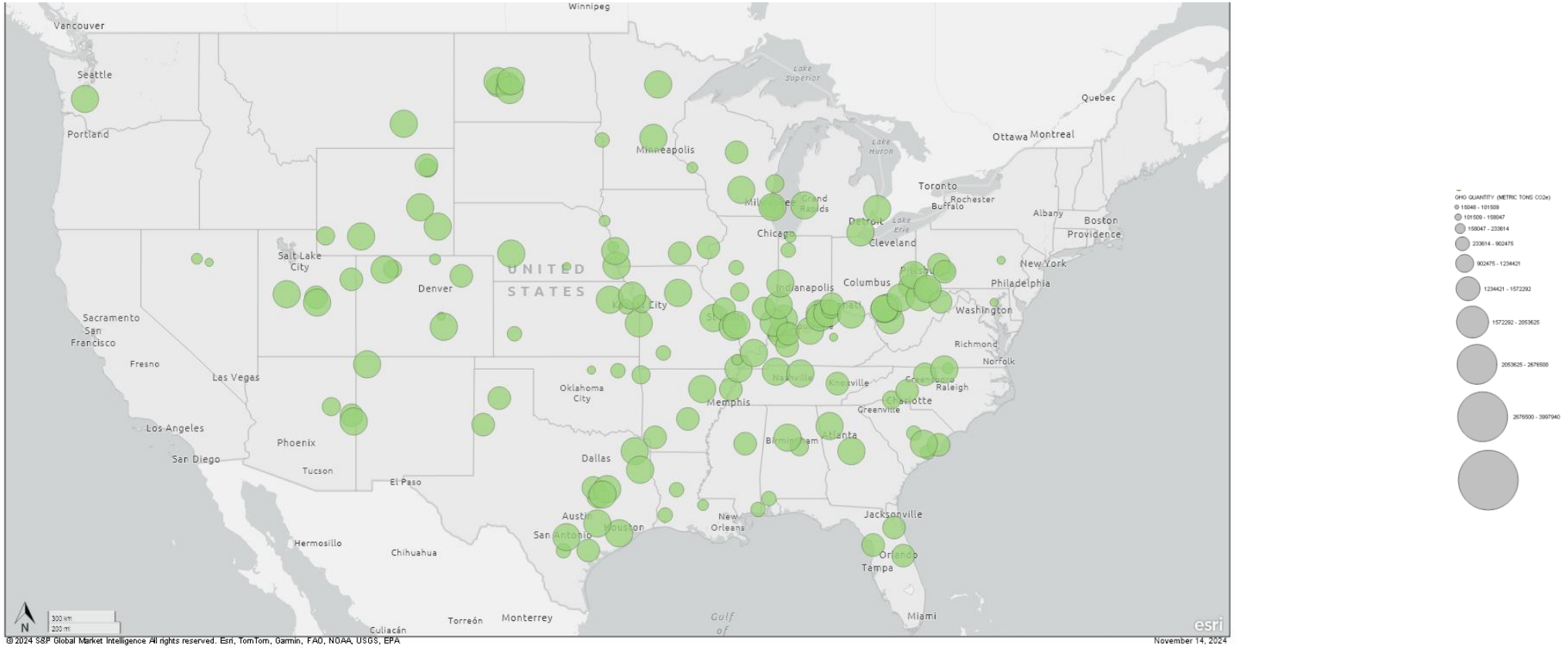
Selection Criteria Matrix: Pathways

- Workforce availability
- Proximity to population centers
- Environmental sensitivities
- Environmental justice considerations (e.g., disadvantaged communities)
- Risk of geohazards
- Does the pathway align with existing pipeline paths?
- Does the pathway align with existing electricity transmission paths?
- Future scalability (i.e., Does the pathway allow for future economic trunk expansion?)
- Political feasibility
- Commercial viability

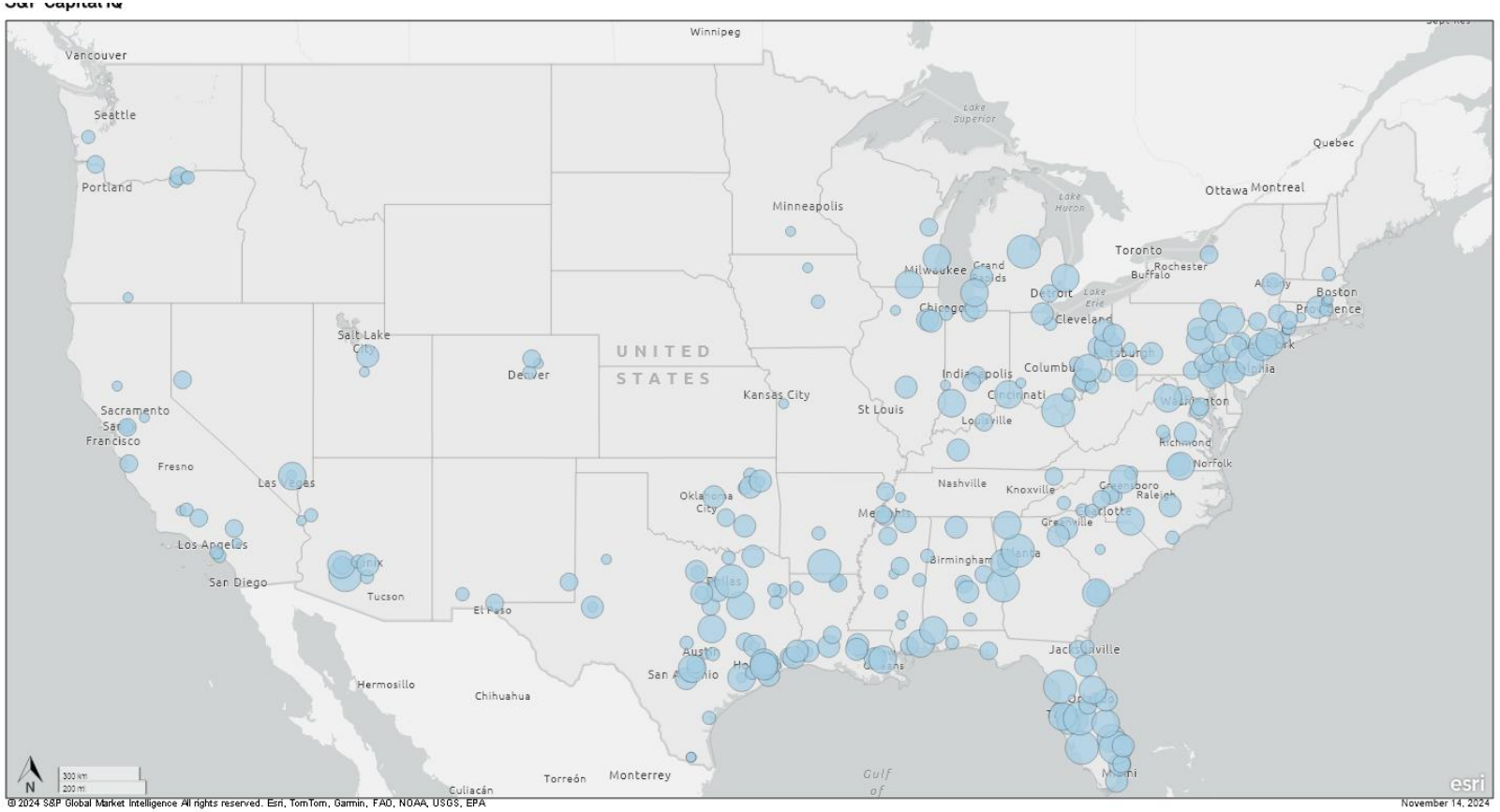
All Industrial Sources and Power Plants (over 100,000 tonnes CO_2/yr)



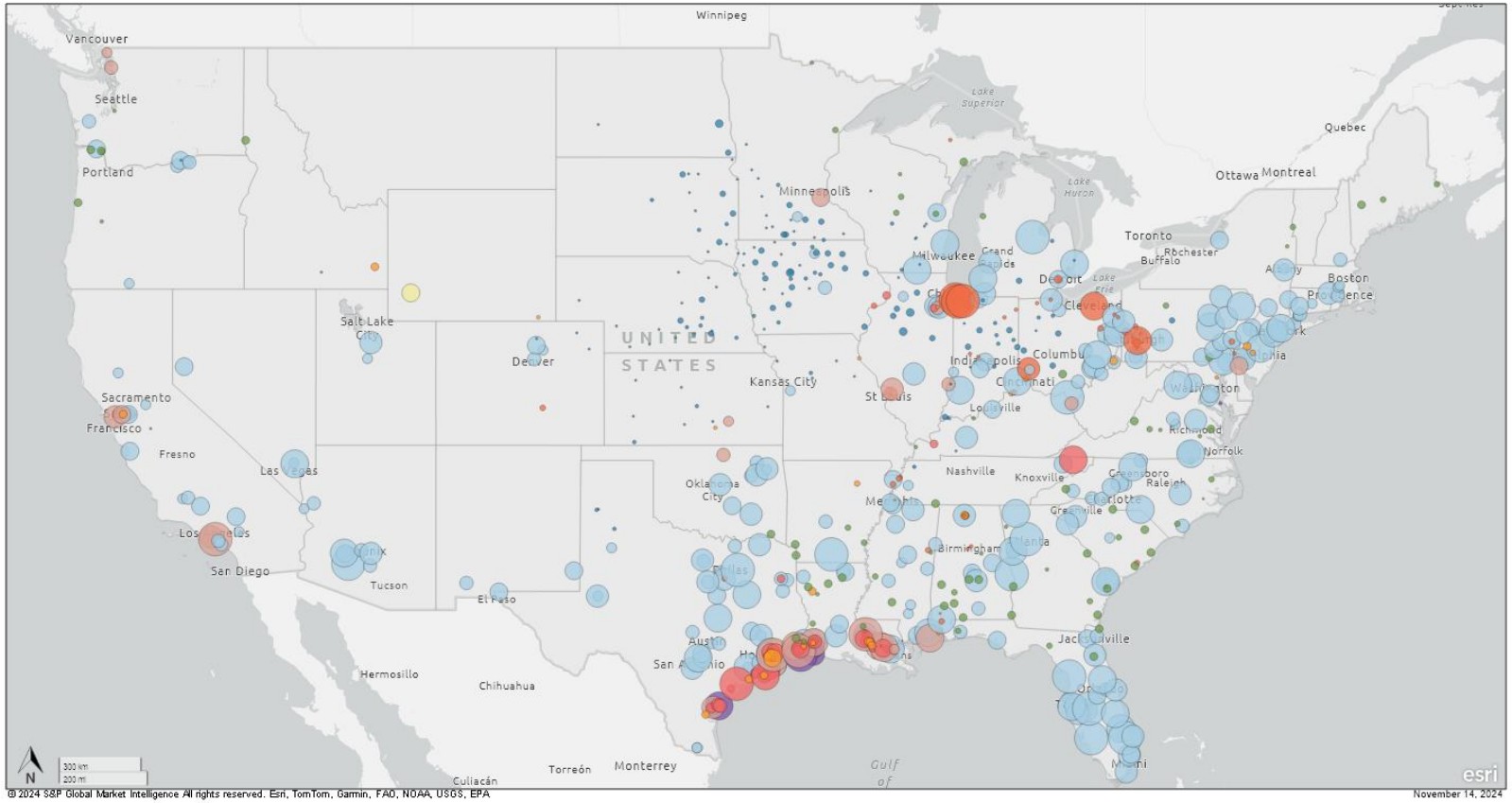
Coal Power Plants (over 100,000 tonnes CO_2/yr)

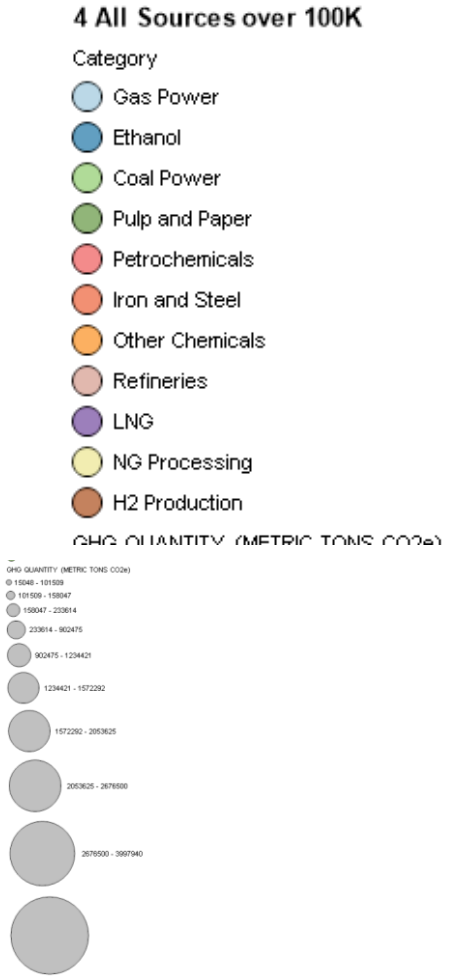


Gas Power Plants (over 100,000 tonnes CO_2/yr

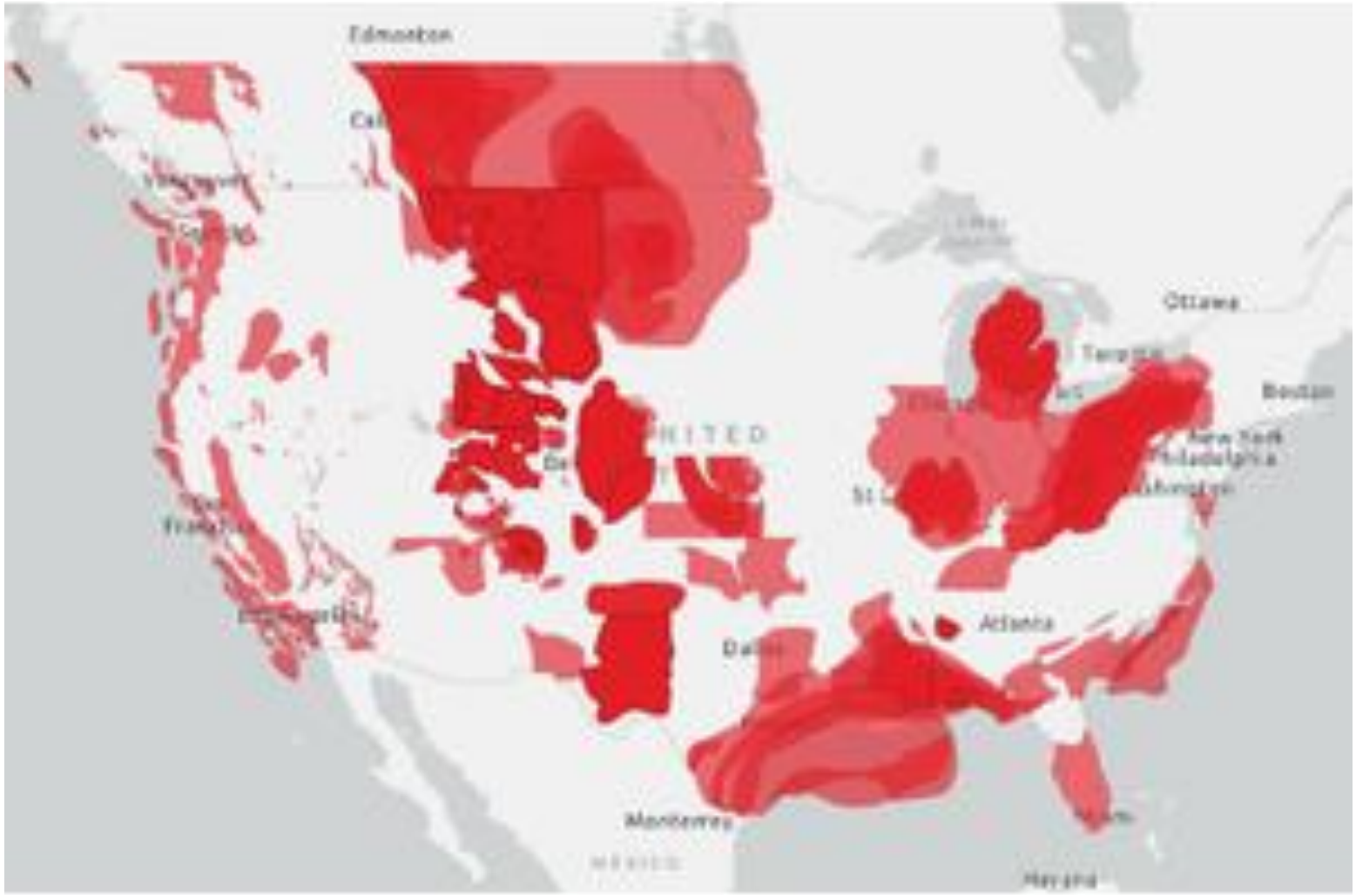


Industrial & Gas Power Plants (over 100,000 tonnes CO_2/yr)



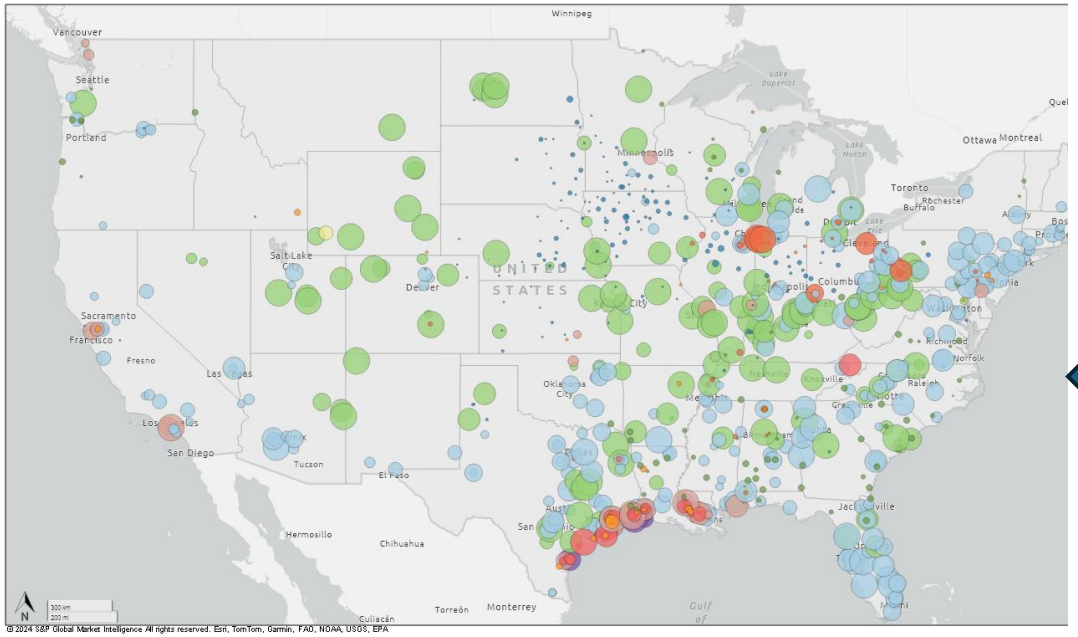


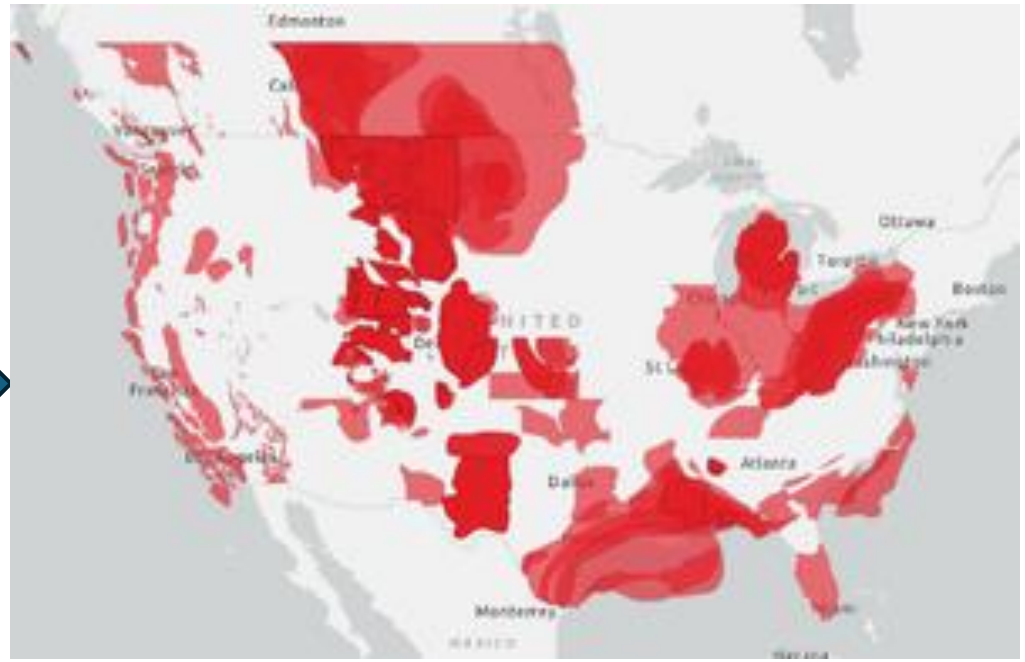
Sinks



Pathway

Connecting the sources and sinks





Questions for the Task Group

Priority Pipelines

Priority pipelines should consider two categories:

- Near-term- help start larger CCS deployment and solve permitting and approval issues
- Long-term scaling- Develop long-term trunk lines that can support an increase in the scale of CCUS activities and contribute to the goal of net-zero emissions economy-wide by no later than 2050.

Criteria for Prioritization

- Does the Task Force agree with our emphasis on a matrix of criteria?
- Do you have suggestions or input on our draft criteria?

CO_2 Sources

- How should the report address uncertainties about future sources? Some sources, such as coal plants, are large CO_2 sources but they are predicted to close. Should priority pipelines include or exclude them?

CO_2 Sinks

- When we map priority sinks, there is a danger of appearance of subjectively selecting regions. How do we share data without appearing to fall into this trap?

Corridors vs. Pipelines vs. Criteria

- There are many published maps of future trunk lines. Should the report focus on “corridors” (wide, thick bars), pipelines (thin sticks) or criteria for identifying these are future needs evolve?