



GLOBAL STATUS OF CCS AND LANDSCAPE IN NORTH AMERICA

VICTOR DER – GLOBAL CCS INSTITUTE - NORTH AMERICA

8TH Annual Stakeholders' Briefing, Atlanta, GA

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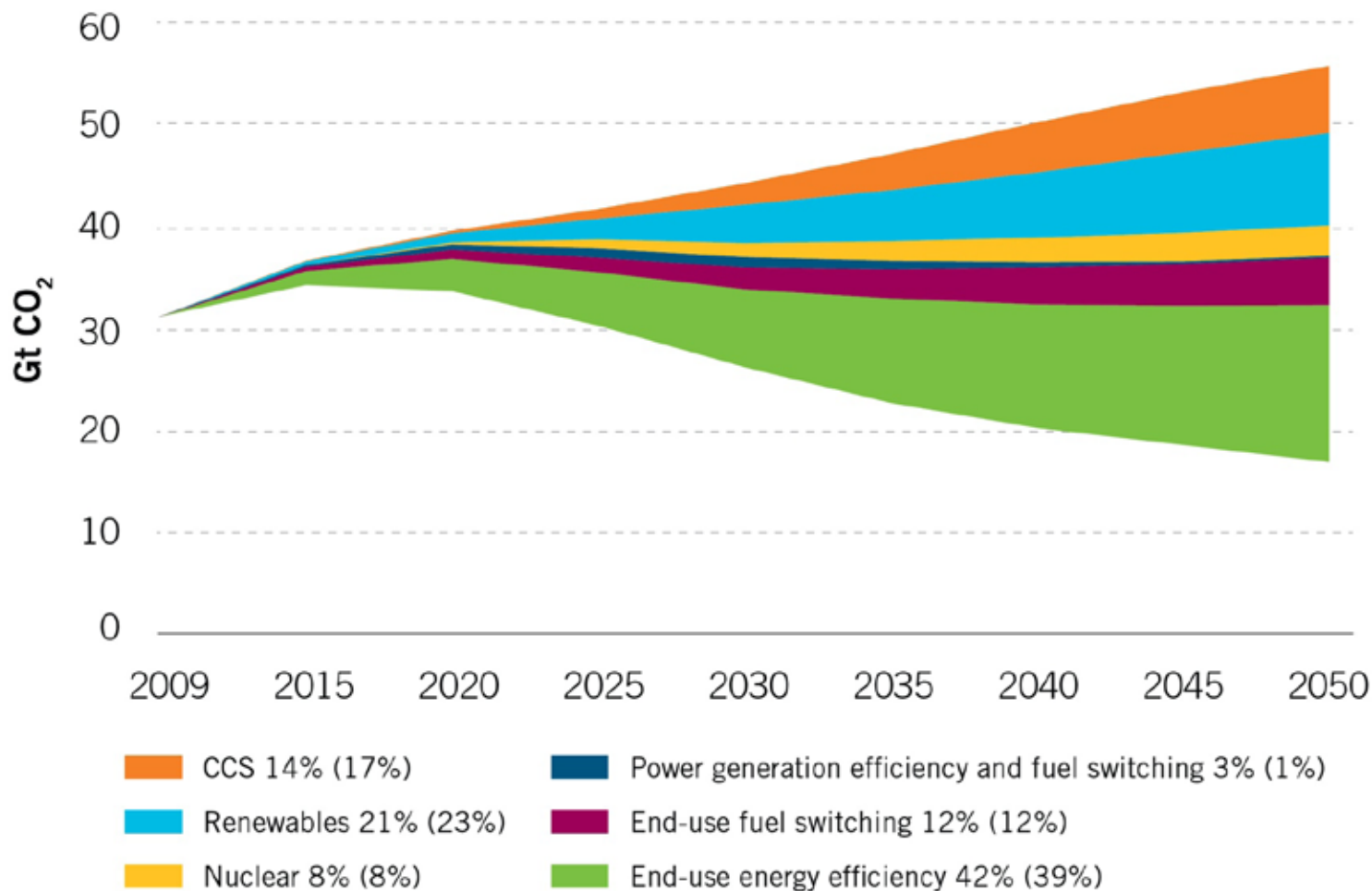
GLOBALY CONNECTED MEMBERSHIP

INSTITUTE MEMBERSHIP NUMBERS AND LOCATIONS TOTAL 361



ACTION IS NEEDED NOW TO ENSURE CCS CAN PLAY A VITAL ROLE IN TACKLING CLIMATE CHANGE

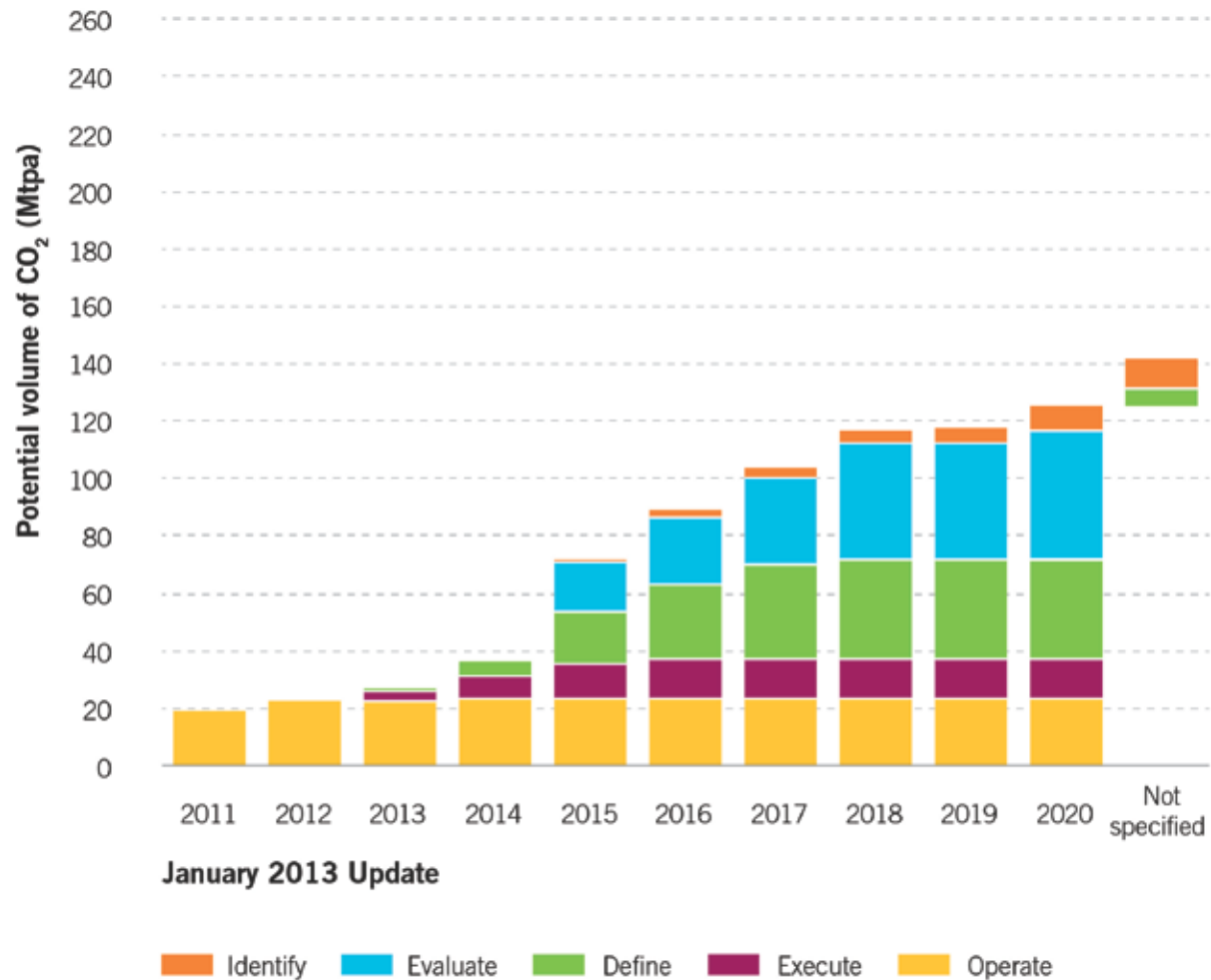
Energy-related CO₂ emission reductions by technology



SOURCE: IEA
NOTE: Percentages represent share of cumulative emissions reductions to 2050. Percentages in brackets represent share of emissions reductions in the year 2050.

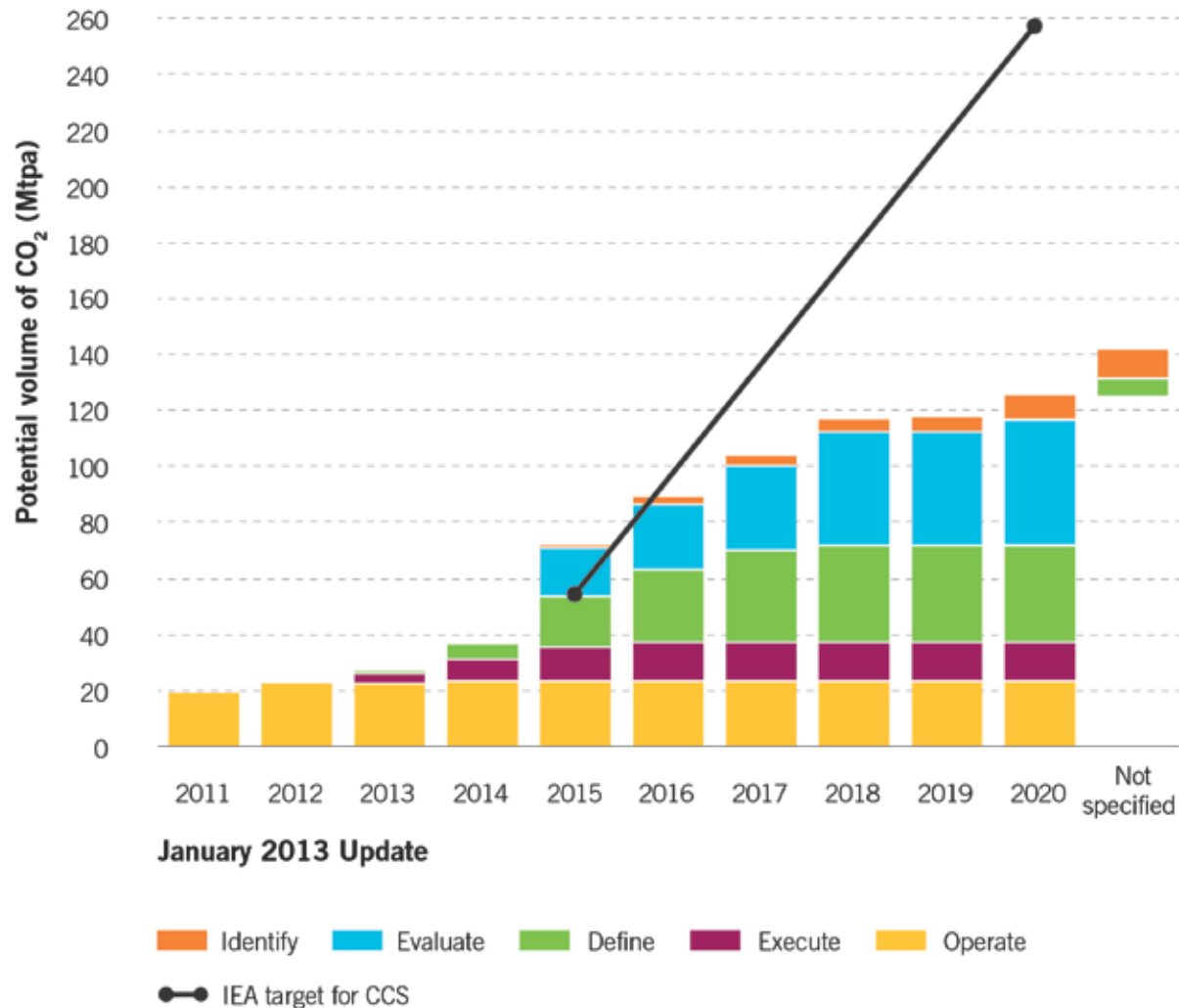
CCS IS ALREADY CONTRIBUTING, BUT PROGRESS MUST BE ACCELERATED

Volume of CO₂ potentially stored by large-scale integrated projects



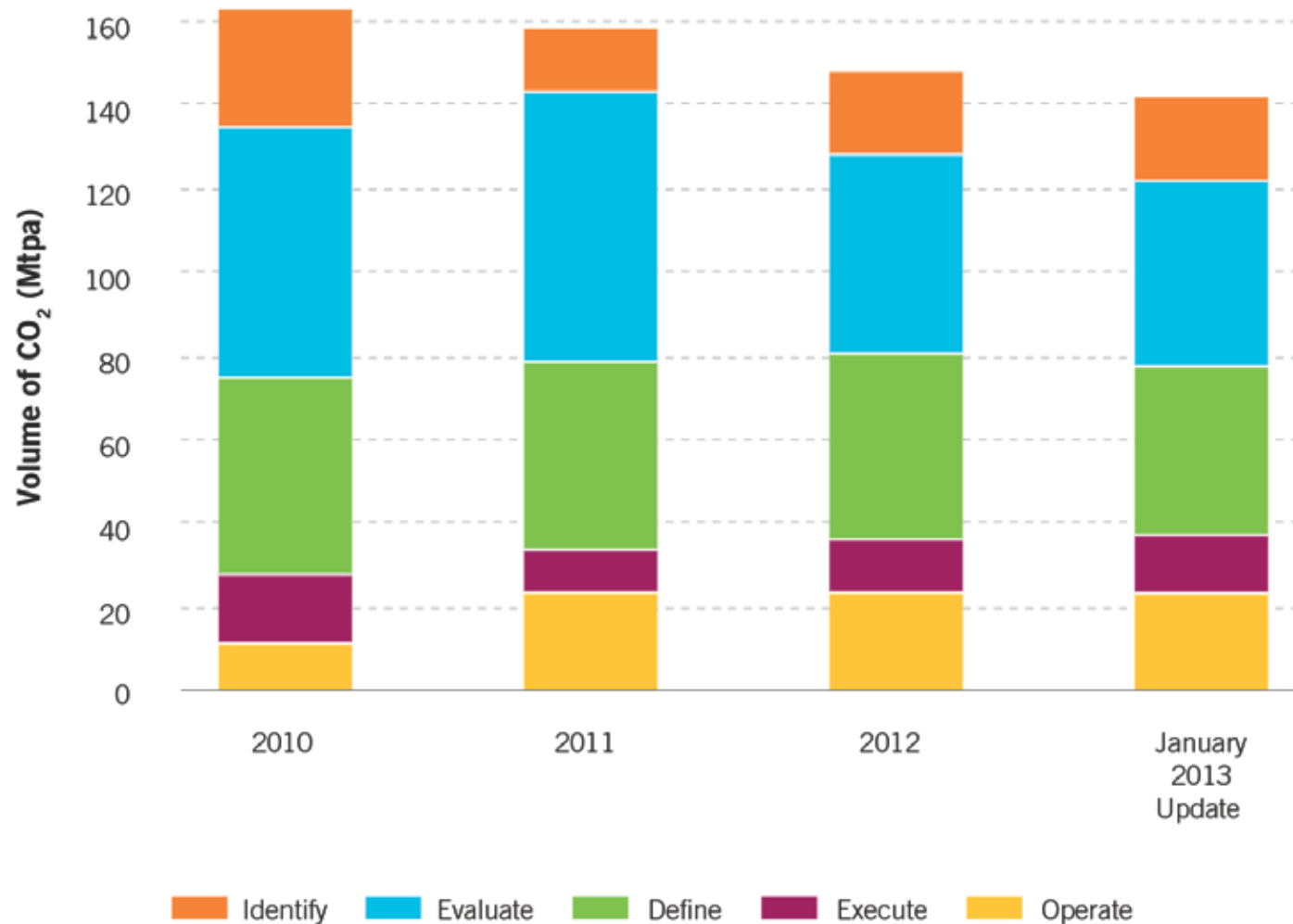
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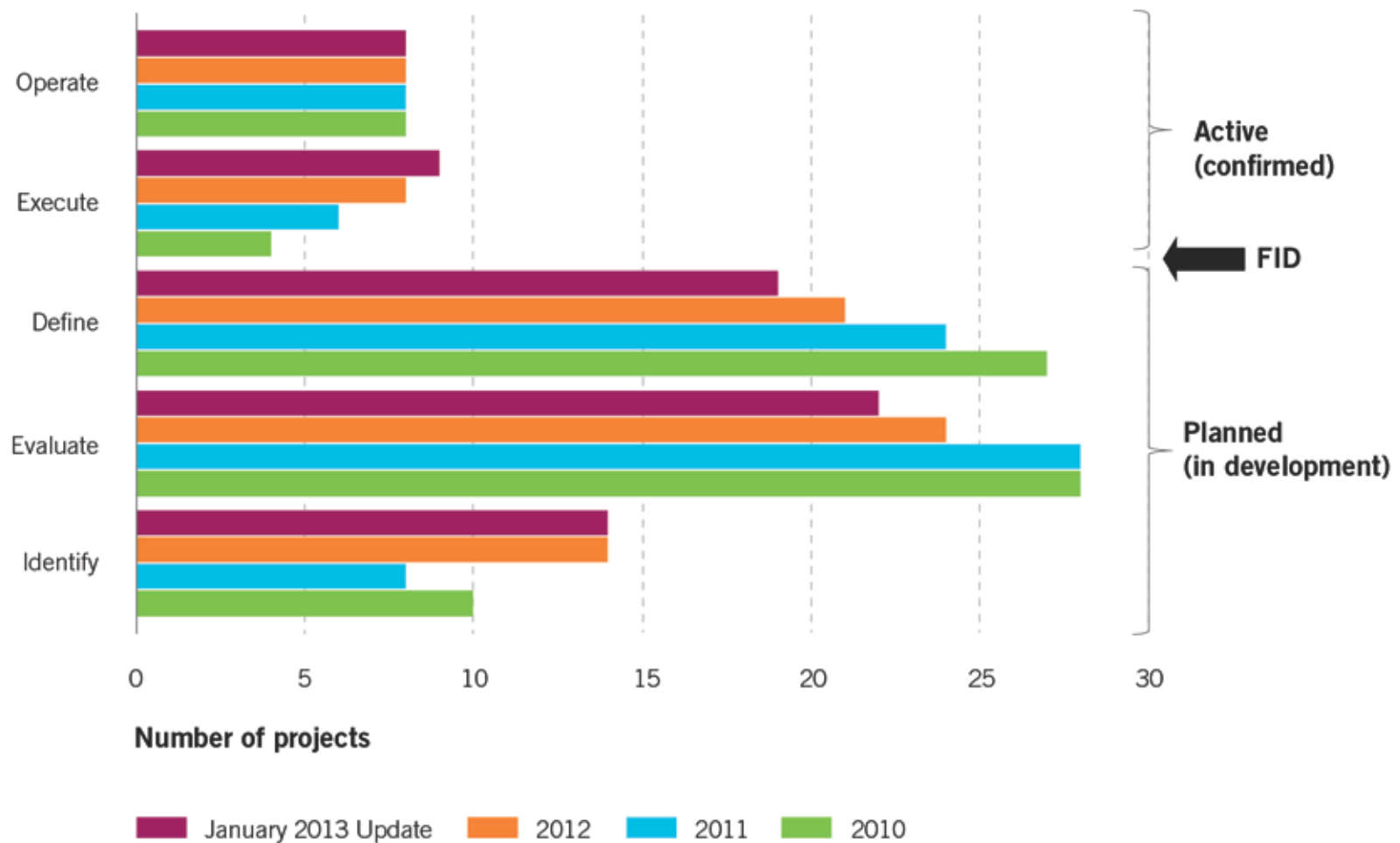
CCS IS ALREADY CONTRIBUTING, BUT PROGRESS MUST BE ACCELERATED

Volume of CO₂ potentially stored by projects is decreasing



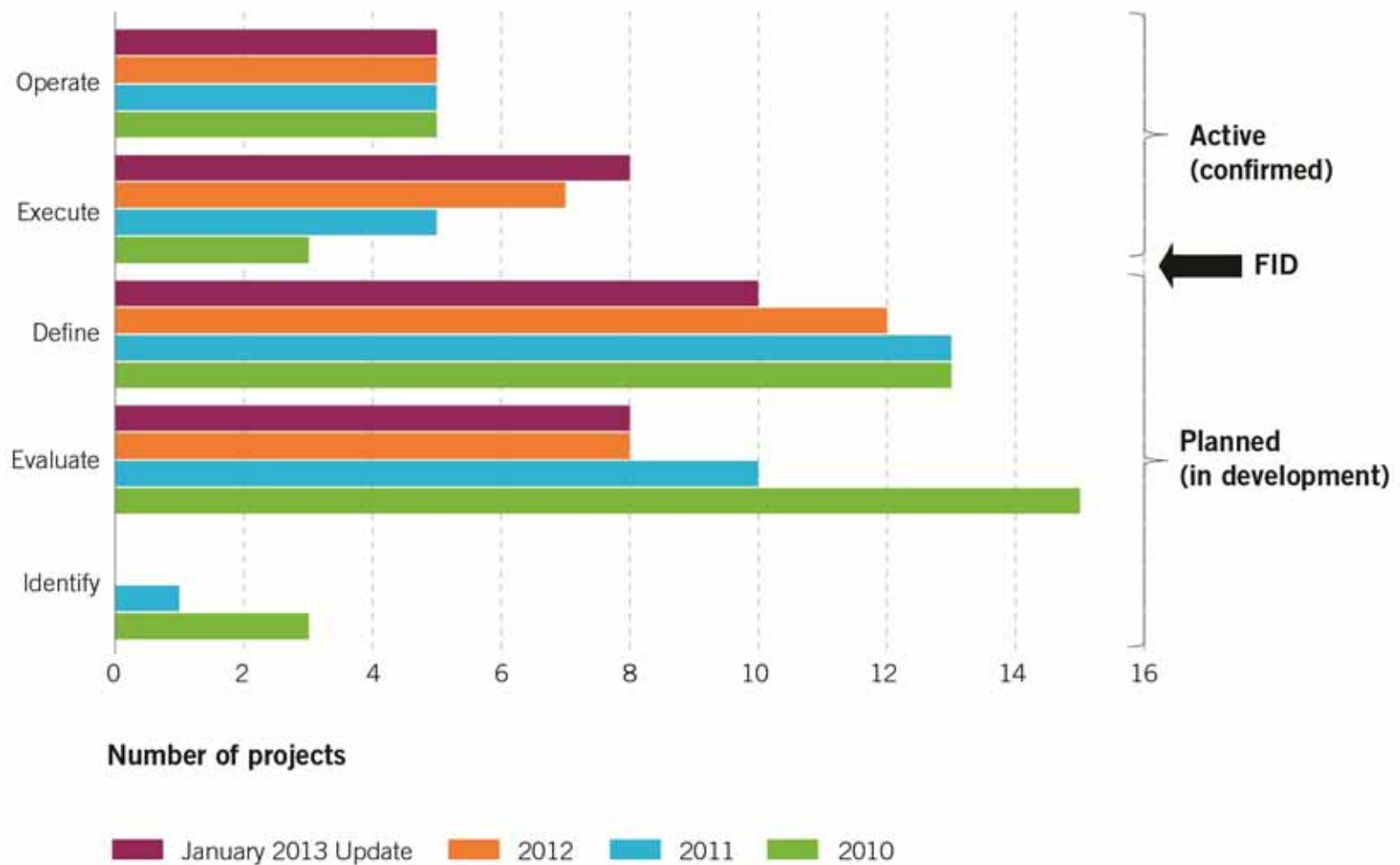
STEADY PROGRESS BUT IMPORTANT DEVELOPMENTS

Large-scale integrated projects by asset lifecycle and year



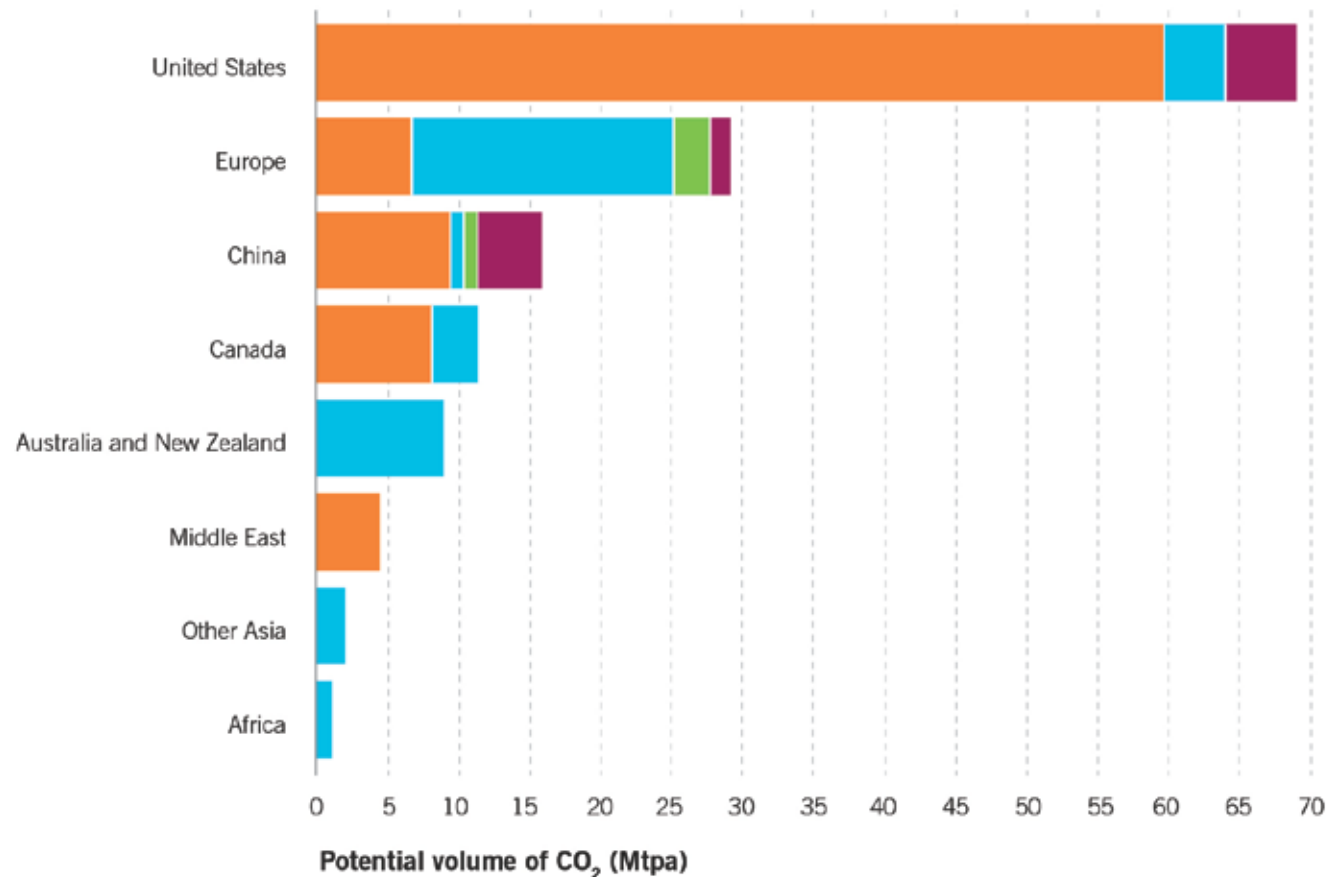
STEADY PROGRESS BUT IMPORTANT DEVELOPMENTS

North America large-scale integrated projects by asset lifecycle and year



STEADY PROGRESS BUT IMPORTANT DEVELOPMENTS

Volume of CO₂ potentially stored by primary storage type and region



Note: Data reflects January 2013
LSIP update

Enhanced oil recovery (EOR) Deep saline formations
Depleted oil and gas reservoirs Various options considered/not specified



CCS BENEFITS FROM CCUS

- **Enables CCS** technology improvement and cost reduction.
- Improves **business case for** demonstration and **early mover projects** through CO₂ revenue.
- Helps **gain** public and policymaker **acceptance**.
- Builds and sustains a **skilled CCS workforce**.
- Supports **CO₂ transportation network** development where EOR is an option.



CCUS CHALLENGES

- CO₂-EOR as **CCUS** although important as an enabler for **CCS**, it is **geographically and capacity limited in the long run**. **North America is fortunately blessed with the opportunity**.
- **CO₂ revenue** currently alone will not bridge gap for high capture cost scenarios; more needs to be done to **narrow the gap (technology, policy, market)**.
- Gaps exists between geologic **storage permitting** and **CO₂-EOR regimes (Class 2 vs Class 6 in the US)**.

ENCOURAGING POLICY SUPPORT BUT MORE REQUIRED

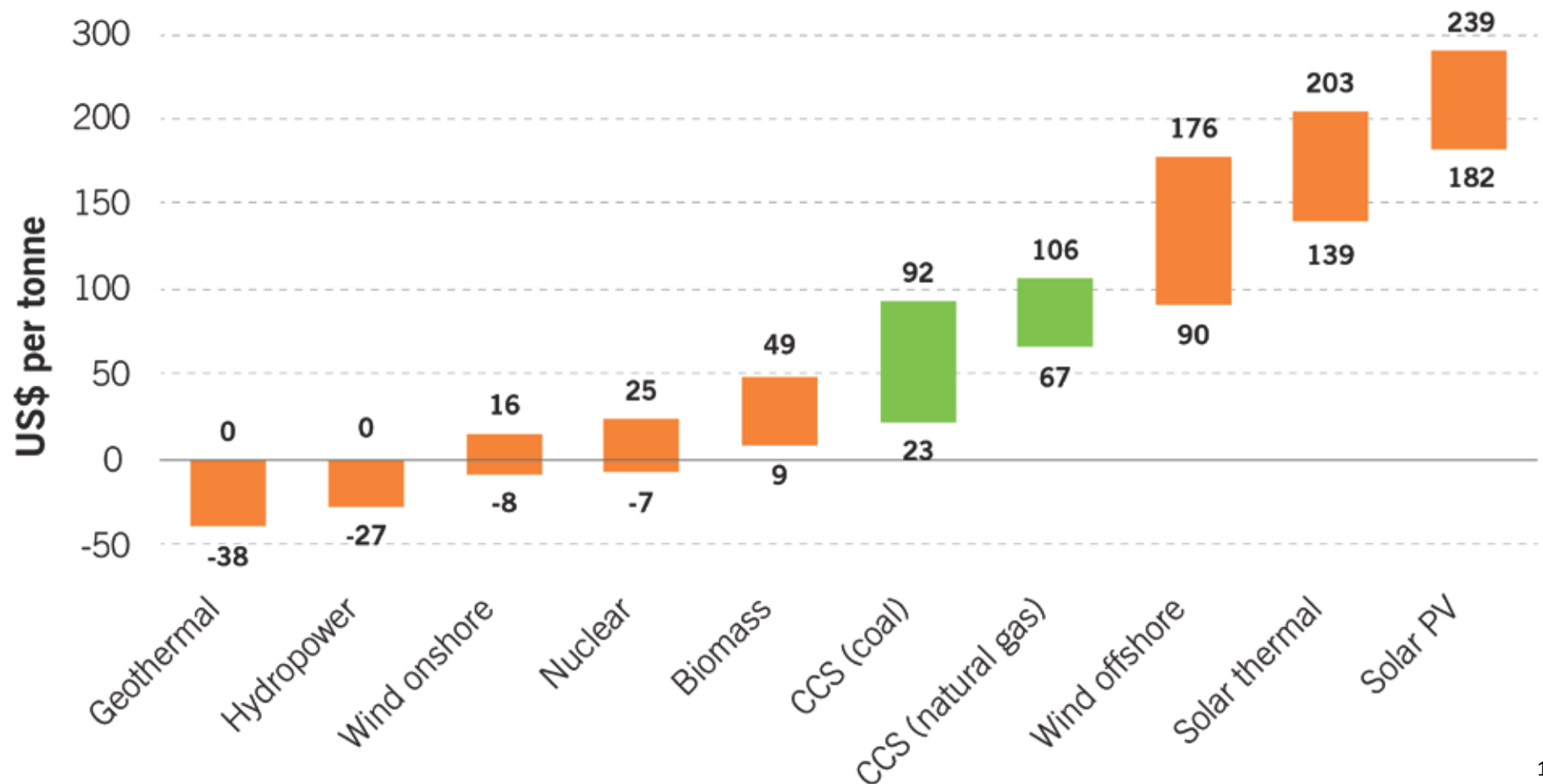
- Historically strong support for CCS research and demonstration in North America.
- GHG performance standards that recognize CCS importance.
- Provincial and state programs to facilitate and incentivise CCS
- New initiatives? (NEORI?)

KEY
MESSAGE

[5]

BARRIERS MUST BE OVERCOME TO REALIZE THE BENEFITS OF CCS

Costs of CO₂ avoided



REDUCING THE COST OF TECHNOLOGY THROUGH DEMONSTRATION PROJECTS IS VITAL



Quest, Canada



TCM, Norway



Boundary Dam,
Canada

Plant Barry, US



RECOMMENDATIONS FOR DECISION MAKERS

- Climate change **legislation** in U.S. **not likely in the near future**; using **existing regulations may not be optimum** for encouraging CCS/CCUS- remains to be seen.
- In order to achieve emission reductions more efficiently and effectively, **CCS needs to be included** and afforded similar **incentives** like those for other technologies.
- **Funding for CCS demonstration** projects should be accelerated and **incentives increased**.
- Expertise and **learning** must be **shared**.

THE GLOBAL STATUS OF CCS: 2012



- Released 10 October 2012.
- Comprehensive coverage on the state of CCS projects and technologies.
- Progress outlined since 2011.
- Challenges and recommendations for moving forward.
- Status of CCS Projects now revised in January 2013 update.

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