

大成 DENTONS

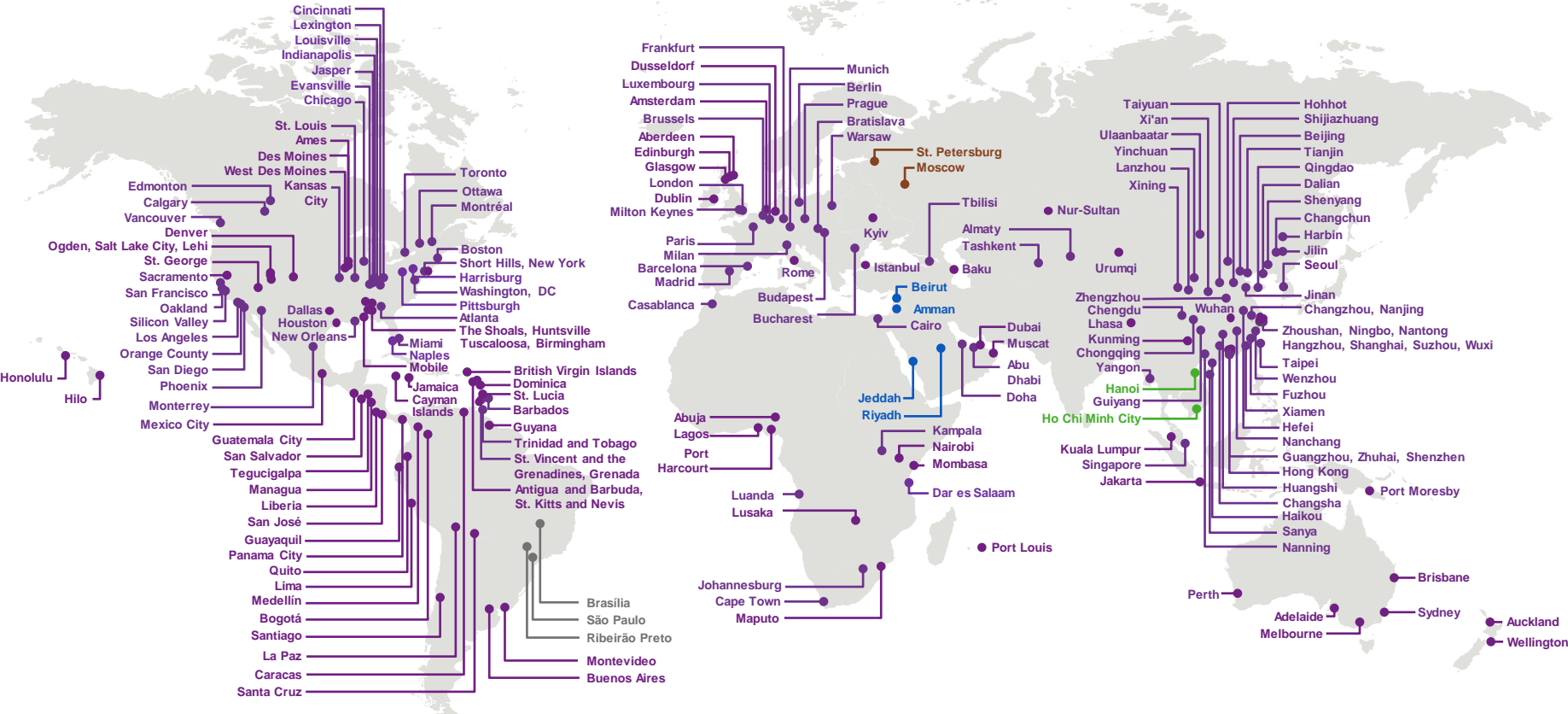
Demand for low carbon hydrogen

Making a market

Adam Brown, Dentons
adam.brown@dentons.com

Grow | Protect | Operate | Finance

Dentons: global footprint



- Locations in purple represent Dentons offices.
- Locations in blue represent associate firms, offices and special alliances as required by law or regulation.
- Locations in green represent approved combinations that have not yet been formalized.
- Locations in gray represent Brazil Strategic Alliance.
- Locations in brown represent offices that are in the process of separating from Dentons.

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Hydrogen: the hardest energy transition?

Comparable energy shifts?

- Candles → town gas
- Water power → steam power
- Whale oil → rock oil (petroleum)
- Gas → electricity (for lighting)
- Coal / diesel → electric (trains)
- Town gas → natural gas
- Fossil fuelled electricity → renewables
- Internal combustion → electric vehicles
- Domestic boilers → heat pumps

Factors in speed of shift

- Cost / quality / safety advantages of the new product compared with old
- Mature / easily adopted technology
- Sources of demand: how few / many decision-makers to move market?
- End-user must invest in new plant
- (Fixed) distribution infrastructure
- Economic / energy demand expansion
- Impact of geography on deployment
- Regulatory drivers for shift

Policy approaches

Regulating to make a market

Producer revenue support / devex and capex grants

Low carbon hydrogen standard(s)

Decisions on grid blending and heating

Reduce producers' system costs / facilitate retrofit

Regulate non-H2 using equipment off the market

Planning system

Sustainable fuel quotas for some sectors

Carbon pricing

Commercial approaches

Building demand by spreading risks

Big
wholesaler
makes
market?

Pricing
models?

Co-operative
approaches?