

TRANSCRITICAL

CO₂ TODAY

Part 3
Chapter 2



An overview

This chapter provides a detailed look into the global transcritical CO₂ market today, including an overview of policy and standards affecting the use of CO₂ as a refrigerant.

By means of a rigorous data collection drive, as well as results from an in-depth industry survey, estimated figures for the global market share based on number of installations can be collated on an easy-to-read world map. The share per sector is also estimated for various key development regions.

Survey participants include representation from manufacturers, contractors and even end users to paint a well-balanced picture of the global transcritical CO₂ market and the most noticeable trends.

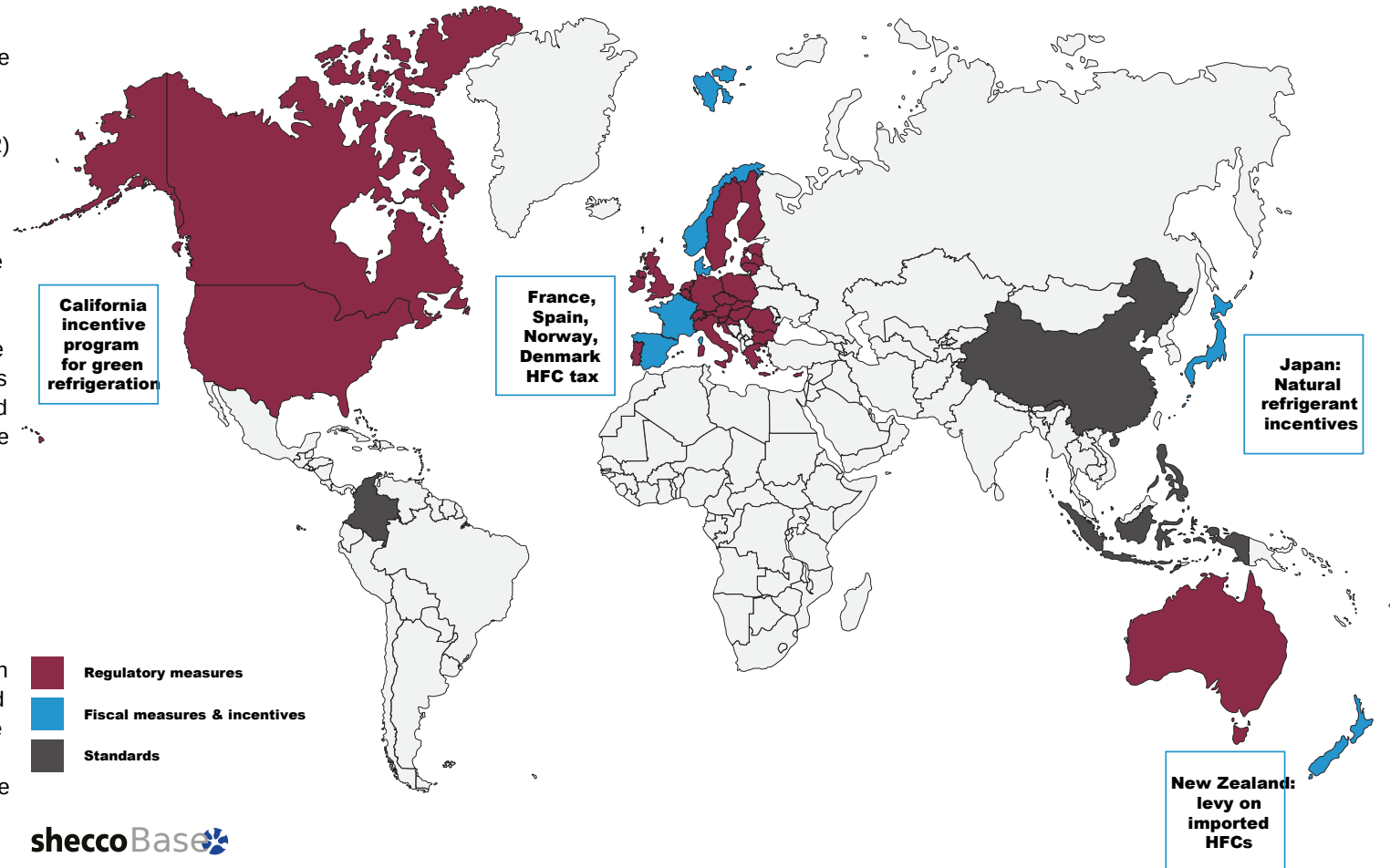
EU

The 2014 EU F-Gas Regulation (No. 517/2014) is set to phase down the use of HFCs, by 79% by 2030. It has a significant impact on users of HFC refrigerants and has led to a rapid growth in HFC prices. There are also various bans in place. For example, as of 2022, HFCs (GWP > 150) are prohibited in multipack centralized refrigeration systems (>40kW/11TR) (except in primary refrigeration circuit of cascade systems where GWP > 1,500 may be used).

The EU F-Gas Regulation also provides for leakage prevention during use and refrigerant collection at disposal. All technicians working on equipment that contains or is designed to contain f-gases require an f-gas handling training qualification. Activities under the scope include refrigerant recovery and decommissioning, as well as installation, leakage checking, and maintenance or servicing.

The regulation makes it very clear that the f-gases must be recovered or transferred to an appropriate greenhouse gas container when they are removed from the equipment.

Furthermore, there are additional restrictions in national legislation of some European countries; and some countries have introduced or will introduce an HFC tax. Countries with an HFC tax in Europe are Denmark, Norway and Spain. France's 2019 Finance Bill, published on December 30, 2018 in its official government journal, confirmed that HFC tax will enter into force as of January 1, 2021. ²



A blue-tinted photograph of a dense forest of tall, thin trees, likely pines or firs, with a misty or hazy atmosphere. The trees are silhouetted against a lighter blue background. The word "REFERENCES" is overlaid in the center in a large, white, bold, italicized sans-serif font.

REFERENCES

Chapter three: 'Transcritical CO₂

today'

1. Banasiak, K. et al. (2019). *CO₂ units for supermarkets and efficient integration*. sheccoBase Webinar- Zero Net Energy Supermarkets: Towards a Sustainable Future. February 22, 2019. Available online at: <http://www.sheccobasewebinar.com/previous>

2. (in French) Journal Officiel de la République Française (30 Décembre 2018), LOI n° 2018-1317 du 28 Décembre 2018 de finances pour 2019 (1). Accessed online at: https://www.cjoint.com/doc/19_01/AdmafVwQ0h_loidefinances2019.pdf

3. United States Environmental Protection Agency (EPA) (2015). *Section 608 of the Clean Air Act: Stationary Refrigeration and Air Conditioning*. Accessed online at: https://www.epa.gov/sites/production/files/2015-08/documents/section_608_of_the_clean_air_act.pdf

4. Garry, M. (2020). *U.S. EPA Rescinds Obama-Era Leak Repair Rules for HFCs*. Available online at: http://r744.com/articles/9405/u_s_epa_rescinds_obama_era_leak_repair_rules_for_hfcs

5. <http://www.usclimatealliance.org/us-climate-alliance-fact-sheet>

6. Garry, M. (2020). *Colorado, Virginia Enact HFC Regulations, Following Other U.S. States*. Available online at: <https://accelerate24.news/refrigerant/colorado-virginia-enact-hfc-regulations-following-other-u-s-states/2020/>

7. McLaughlin, C. (2017). *Key Japan CO₂ regulation lifted*. Available online at: http://r744.com/articles/7751/key_japan_co2_regulation_lifted_after_several_years_of_discussion

8. United Nations Treaty Collection (2020). *2. f Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer*. Available online at: https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-2-f&chapter=27&clang=_en

9. New Zealand Ministry for the Environment (2019). *Kigali Amendment to the Montreal Protocol*. Available online at: <https://www.mfe.govt.nz/more/international-agreements-kigali-amendment>

10. New Zealand Ministry for the Environment (2019). *Climate Change Response (Zero Carbon) Amendment Act*. Available online at: <https://www.mfe.govt.nz/climate-change/zero-carbon-amendment-act>