

BANKS THAT BUILD CARBON PRICING INTO THEIR RISK PLANNING WILL HAVE AN ADVANTAGE AS CLIMATE FINANCE MATURES

CARBON PRICING SCHEMES ARE CORE WEAPONS IN THE FIGHT AGAINST CLIMATE CHANGE, AND THEIR IMPACT WILL HAVE SIGNIFICANT CONSEQUENCES FOR BANKS' BALANCE SHEETS



Climate Risk Perspectives

EMERALD PATHWAYS

January 14, 2022

Series 2 • Issue 5

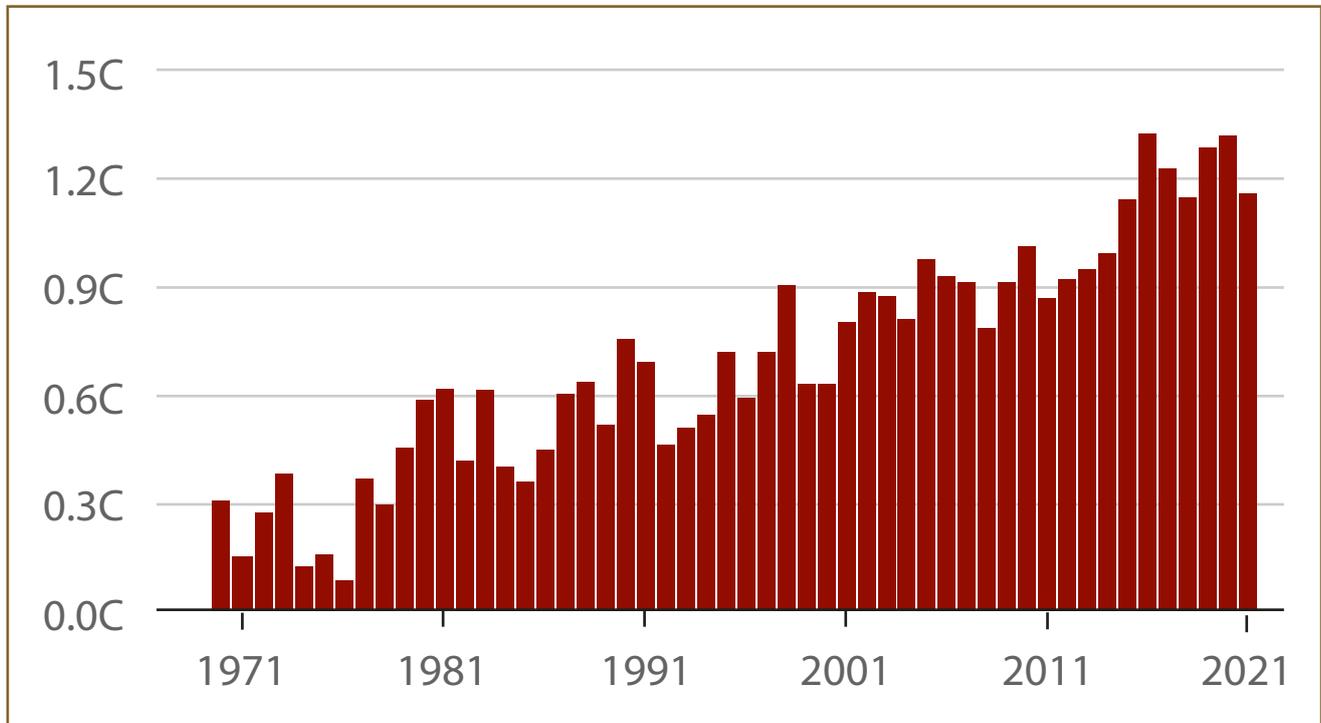
By **Marcus Cree**, FRM SCR



marcus.cree@greenpointglobal.com | sanjay@greenpointglobal.com

International Corporate Center, 555 Theodore Fremd Avenue, Suite A102 Rye, NY 10580

The year 2021 was officially the 5th warmest year on record and adds to the tally that see the last seven years as the seven warmest since the industrial revolution. 2021's temperature is a particularly stark result given the 'La Nina' effect that would typically dampen the global warming impact.



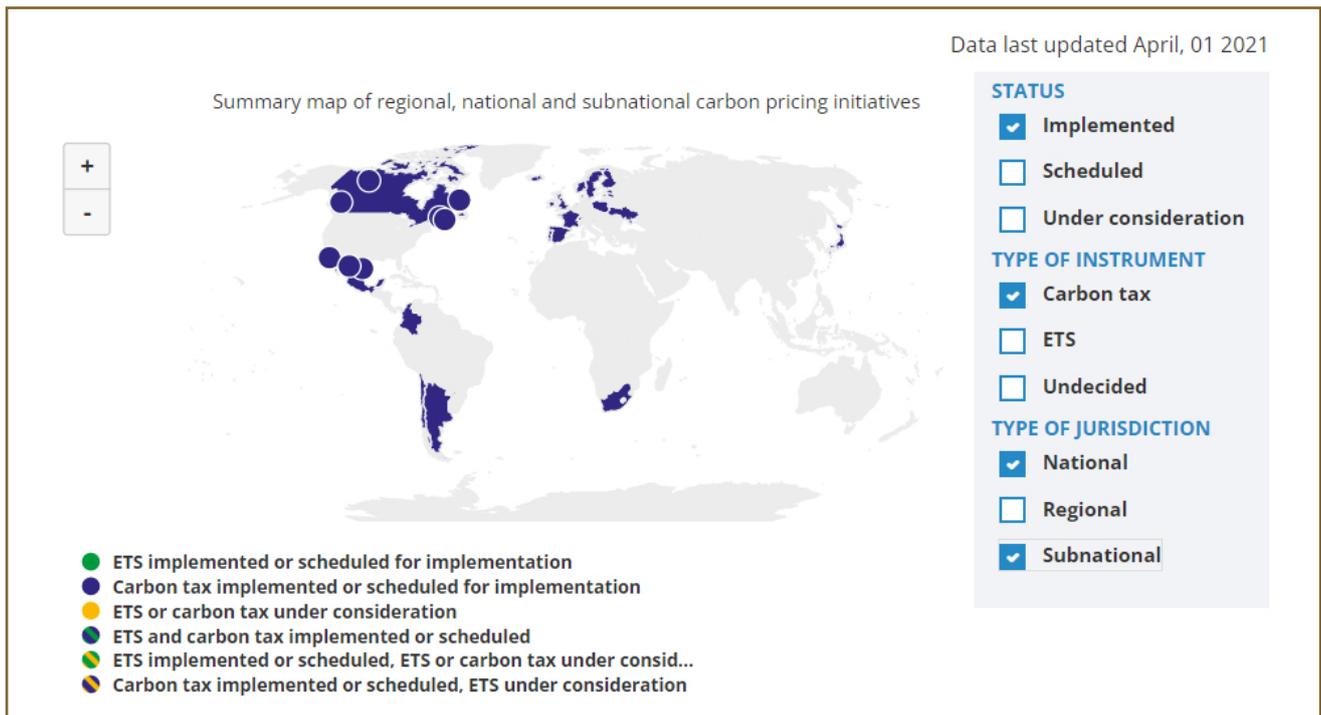
Source: ERA5 - Copernicus Climate Service

This is accompanied by the consistently increasing accumulation of CO₂ in the atmosphere, which continues to rise, despite commitments from world leaders to reduce emissions of the gas since the Conference of Parties (COPs), in Kyoto (1998) and Paris (2016).

Carbon pricing schemes are becoming a necessity...

The urgency of curtailing CO₂ emissions has led to the creation of carbon pricing schemes around the globe. There are two distinct types of carbon control - direct taxation of CO₂ and carbon trading schemes and each has specific characteristics.

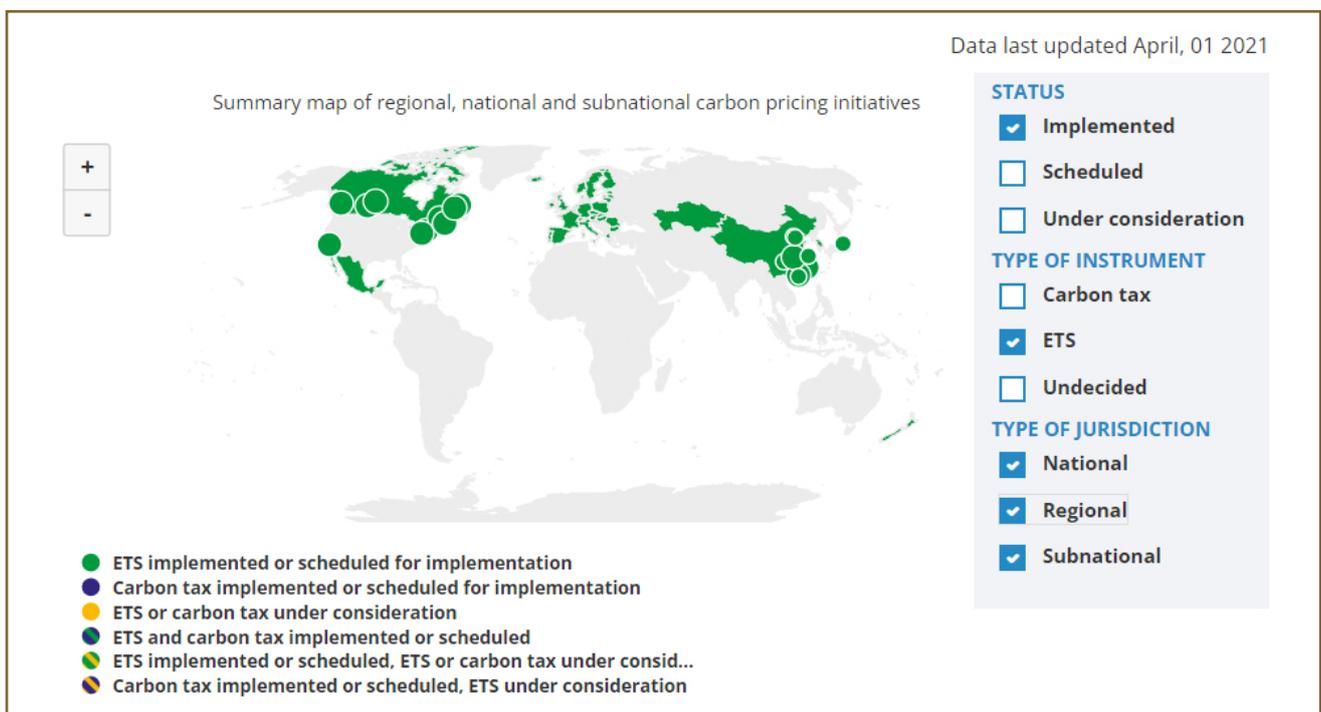
Carbon taxes represent the most direct means of charging for emissions. Currently, 27 national and 8 regional governments have charges in place, which force emitters to pay a set amount per tonne of gas produced.



Source: The World Bank - Carbon Pricing Dashboard

The exact pricing of a tonne of gas varies by jurisdiction, but all are expected to rise as the national CO₂ reduction targets become more aggressive through the 2020s. This emission controlling method allows comprehensive pricing to be applied and is transparent, making it useful for business planning purposes. Crucially, though, a carbon tax does not explicitly limit the amount of CO₂ being released into the atmosphere.

The alternative to a carbon tax, an Emissions Trading Scheme (ETS), is also popular in several countries and regions. This includes the EU, which has instituted a bloc-wide ETS.



Source: The World Bank - Carbon Pricing Dashboard

It should be noted that while there is no federal ETS or carbon tax in the US, several states have independently implemented a trading system locally. ETSs are sometimes called 'Cap and Trade' systems and have the following basic features:

- A total cap is set on the emissions from the covered area, and by the covered industries/sectors
- This total is converted into notional carbon credits
- A percentage of the credits are allocated for free to specific emitters
- The remainder are normally auctioned off to the highest bidders
- Unused credits can then be traded in a valid carbon market
- The total emission allowance, and therefore the number of available credits, is reduced annually

ETS schemes have an advantage by being highly targeted by industry, and create an absolute, decreasing limit, in a way that general carbon taxes do not. That said, it is possible to build up a surplus of unused credits in the market, and there is no minimum price. These two issues result in an economic downturn, potentially making greenhouse gas emission rights cheap to buy on the open market, and thereby working against their design intent.

The EU has a highly developed ETS...

The EU implemented its ETS in 2005, and it currently stands as the largest in the world. Under the scheme, Greenhouse Gasses (GHGs) that are emitted by power plants, industrial factories, and the aviation sector are limited by a decreasing total 'cap'.

The EU ETS provides equivalency between CO₂ and Nitrous Oxide (N₂O) or Perfluorocarbons (PFCs), making it a comprehensive GHG control, rather than just a limit on carbon emission. Between 2021 and 2030, the emission cap is set to decrease by 2.2% per annum. This is an increase from 1.74% that prevailed from 2013 to 2020.

The allowance of international credits, coupled with the economic crisis of 2008, led to a surplus of credits in the market. The EU dealt with this via a postponement of the auction of 900 million credits and the establishment of a Market Stability Reserve (MSR). The reserve is used as a price control by holding back excess credits, and a potential source of liquidity for credits if needed.

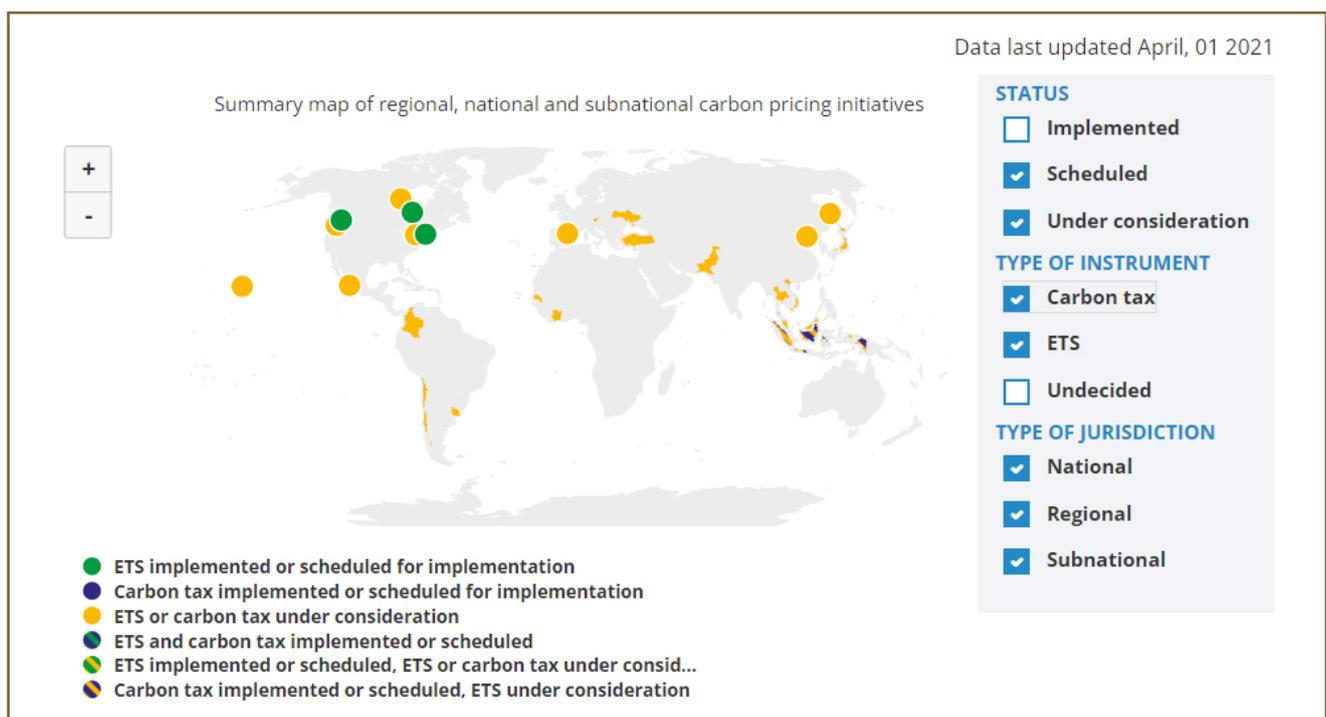
The increased reduction rate and use of the MSR are designed to maintain a GHG price level that disincentivizes processes that would prevent the bloc from achieving its 'Green Deal' objectives. Equally important is the expansion of the ETS to include maritime shipping and closer checks on 'leakage'.

The two scheme types work in tandem, to create a market price...

With the two types of carbon pricing in active use, a global price for CO2 emission emerges. As border taxes, regime arbitrage, and cross-market credits develop, this price will stabilize and be usable as a guide to plan future additional business costs across economies and sectors.

Banks should take note of the growth of carbon pricing plans...

The EU is ahead but far from alone in the maturity of its carbon pricing. Along with the 45 countries with active schemes, which currently account for 22.5% of GHG emissions globally, plans are being discussed for several more around the world.



Source: The World Bank - Carbon Pricing Dashboard

Banks are currently engaged in monitoring and reporting their 'Scope 3' emissions, which equate to the CO2 they finance through loans and other credit facilities. Taken with careful analysis of the carbon pricing schemes in production or development, they can:

- Use climate pathways developed by the International Panel on Climate Change (IPCC)
- Set costs against those pathways as developed by the Net Greening of the Financial System (NGFS)
- Attribute costs to obligors according to industry and estimated impact
- Use the current emissions' costs generated by the carbon pricing market

- Fine-tune the attributable cost to business, making up the balance sheets according to their adaptation actions and CO2 reduction plans
- Re-price loans and facilities to reflect the changing cost environment
- Become green finance centers, based on scientifically-based sustainable incentives to borrowers

All data needed to begin this work and set up the internal businesses and processes is available, and the accuracy of that data will increase through the coming decade as national and regional targets firm up towards 2030.

GreenCap can help...

GreenCap is a stand-alone 'Risk As A Service' (RAAS) system that enables banks to consolidate their balance sheets in terms of Scope 3 emissions and the additional risk capital that will be expected to be reserved from the additional credit risks arising from the underlying borrowers' exposure to the increased risks from climate change policy and carbon pricing.



Please visit greencap.live for more insights into green finance and a wealth of resources designed and curated to assist banks in their sustainable journeys.



ABOUT GREENCAP

- GREENCAP is a turnkey 'Risk as a Service' (RaaS) solution, designed for banks to include climate change as a category in their risk management frameworks.
- The solution allows banks to replicate climate pathways within their scenarios for economic impact and risk analysis.
- Using GreenCap, banks can modify pathways and scenarios to include the timing effects of delayed sustainability transition measures.
- Loans and credit facilities are measured and monitored against risks arising from both 'physical' and 'transition' impacts.
- GreenCap provides support for risk reporting and governance in the areas of 'Responsible Banking' and climate change.
- With GreenCap, banks can ensure that their climate strategies are financially grounded, and loan pricing is optimized throughout the transition to a green global economy.



ABOUT GREENPOINT FINANCIAL

- GreenPoint Financial is a division of GreenPoint Global, which provides software-enabled services, content, process and technology services, to financial institutions and related industry segments.
- GreenPoint is partnering with Finastra across multiple technology and services platforms.
- Founded in 2006, GreenPoint has grown to over 400 employees with a global footprint. Our production and management teams are in the U.S, India and Israel with access to subject matter experts.
- GreenPoint has a stable client base that ranges from small and medium-sized organizations to Fortune 1000 companies worldwide. We serve our clients through our deep resource pool of subject matter experts and process specialists across several domains.
- As an ISO certified by TÜV SÜD South Asia, GreenPoint rigorously complies with ISO 9001:2015 and ISO 27001:2013 standards.
- GreenPoint is owned by its founders and principals and is debt free.



Marcus Cree

MANAGING DIRECTOR AND
CO-HEAD OF FINANCIAL TECHNOLOGY AND SERVICES

Marcus has spent 25 years in financial risk management, working on both the buy and sell side of the industry. He has also worked on risk management projects in over 50 countries, gaining a unique perspective on the nuances and differences across regulatory regimes around the world.

As Managing Director, Marcus co-heads GreenPoint Financial Technology and Services and has been central in the initial design of GreenPoint products in the loan book risk area, including CECL and sustainability risk. This follows his extensive experience in the Finastra Risk Practice and as US Head of Risk Solutions for FIS. Marcus has also been a prolific conference speaker and writer on risk management, principally market, credit and liquidity risk. More recently, he has written and published papers on sustainability and green finance.

Marcus graduated from Leicester University in the UK, after studying Pure Mathematics, Psychology and Astronomy. Since graduation, Marcus has continually gained risk specific qualifications including the FRM (GARP's Financial Risk Manager) and the SCR(GARP's Sustainability and Climate Risk). Marcus's latest academic initiative is creating and teaching a course on Green Finance and Risk Management at NYU Tandon School of Engineering.



Sanjay Sharma, PhD

FOUNDER AND CHAIRMAN

Sanjay is the Founder and Chairman of GreenPoint Global - a risk advisory, education, and technology services firm headquartered in New York. Founded in 2006, GreenPoint has grown to over 380 employees with a global footprint and production and management teams located here in the U.S, India and Israel.

During 2007-16 Sanjay was the Chief Risk Officer of Global Arbitrage and Trading Group and Managing Director in Fixed Income and Currencies Risk Management at RBC Capital Markets in New York. His career in the financial services industry spans over two decades during which he has held investment banking and risk management positions at Goldman Sachs, Merrill Lynch, Citigroup, Moody's and Natixis. Sanjay is the author of "Risk Transparency" (Risk Books, 2013), Data Privacy and GDPR Handbook (Wiley, 2019) and co-author of "The Fundamental Review of Trading Book (or FRTB)- Impact and Implementation" (RiskBooks, 2018).

Sanjay was the Founding Director of the RBC/Hass Fellowship Program at the University of California at Berkeley and is an Adjunct Professor at EDHEC, Nice in France. Sanjay is also Adjunct Professor at Fordham University where he teaches a similar master's capstone course and at Columbia University. He has served as an advisor and a member of the Board of Directors of UPS Capital (a Division of UPS) and is a frequent speaker at industry conferences and at universities. He served on the Global Board of Directors for Professional Risk International Association (PRMIA).

He holds a PhD in Finance and International Business from New York University and an MBA from the Wharton School of Business and has undergraduate degrees in Physics and Marine Engineering. Sanjay acquired his appreciation for risk firsthand as a merchant marine officer at sea where he served for seven years and received the Chief Engineer's certificate of competency for ocean-going merchant ships. Sanjay lives in Rye, NY with his wife and two teenage sons.