

# The Green Bond

SEB

29 August 2019

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*From Christopher Flensburg, Head of Climate & Sustainable Finance:* After an explosive start to the year we are seeing a seasonal easing over the summer, however, client discussions and pipelines indicate that 2019 will continue the trend of acceleration in Green Finance – it feels like Green has become a mainstream product and discussions with clients in a larger part of the world are mostly on “how and when” rather than “why” Green Finance.

### Transition update: Stall warning from renewable investment – page 3

The transition to an emission free energy system remains on a strong long-term trajectory, but falling renewable energy investment in 2018 and 2019 is a warning that the speed is still too slow. What we need to speed up the transition is market incentives designed to mobilize private capital flows. The EU commission’s new taxonomy framework aims to expand both the supply of and demand for sustainable finance by directing it towards more sectors and expanding the range of eligible investments.

### Green Bond Market Update – page 7

The Green Bond market continued a positive trend over the summer with July significantly outperforming last year with total issuance of USD 21.7bn. The positive development has not been as strong in August, but issuance YTD on 28<sup>th</sup> of August 2019 is nonetheless up 29% YoY and with total issuance already passing the USD 140bn it is comfortably on track to match our more bullish full-year scenario of USD 210-240bn.

### Reflections on Developing a Quantitative Tool on Basis of the EU Taxonomy – page 11

During this summer, we have been digging deep into the EU Taxonomy on Sustainable Finance. The result is a quantitative tool that measures the Taxonomy-aligned share of listed equities. The work has given many insights, but also a fair bit of frustration. We share our reflections about the Taxonomy report by the EU Technical Expert Group (TEG).

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OECD: Making Blended Finance Work for Water and Sanitation Global financing needs for water-related investment are significant and increasing. Yet, despite a strong economic case for such investment, financing persistently falls well short of needs. Public sources of finance alone will not be sufficient to achieve water security in the future. Blended finance can play a critical role in mobilising commercial finance.

ICIMOD: Protecting the Pulse of the Planet with Green Investments in the Hindu Kush Himalaya The Hindu Kush Himalaya, the “water towers of Asia”, are faced with a crisis that threatens the water security of a fifth of humanity. Even if carbon emissions are rapidly cut and countries succeed in limiting global warming to 1.5 °C, 36 percent of the glaciers in the HKH will have gone by 2100. These glaciers are water storage for 250 million people in the hills and mountains of the HKH, and 1.65 billion people downstream.

GIZ, SEB & Page: Introduction to Sustainable Finance It is with great pleasure that we present the e-learning course “Introduction to Sustainable Finance”. The course is hosted at UN CC:e-Learn, the One UN Climate Change Learning Partnership. The course is designed in an interactive and practice-oriented manner and covers the fundamentals of Sustainable Finance while providing several opportunities to dive deeper.

#### Thomas Thygesen Editor

*Head of Strategy, Head of Research, Climate & Sustainable Finance*  
[thomas.thygesen@seb.dk](mailto:thomas.thygesen@seb.dk)

#### Ben Powell

*Deputy Head of Climate & Sustainable Finance*  
[benjamin.powell@seb.no](mailto:benjamin.powell@seb.no)

#### Kristoffer Nielsen

*Climate & Sustainable Finance*  
[kristoffer.nielsen@seb.se](mailto:kristoffer.nielsen@seb.se)

#### Elizabeth Mathiesen

*Senior Strategist  
SEB Markets Research*  
[elizabeth.mathiesen@seb.dk](mailto:elizabeth.mathiesen@seb.dk)

#### Tine Vist Salo

*Quantitative Strategist,  
SEB Markets Research*  
[tine.vist.salo@seb.dk](mailto:tine.vist.salo@seb.dk)

[SEB Green Bonds Website](#)



## Letter to the reader

After an explosive start to the year we are seeing the seasonal setting over the summer, however, client discussions and pipelines indicate that 2019 will continue the trend of acceleration in Green Finance – it feels like Green has become a mainstream product and discussions with clients in a larger part of the World are mostly on how and when rather than why to do Green Finance.

This brings us back to the transition story and the next generation of Green. To get there we need to focus on the target of net zero emissions by 2050. To get there we need most of society to collaborate – we need to understand how to use and re-use the engineering skills available and the infrastructure in place – and we need to differentiate between Green and transition. In this publication we are trying to start this discussion and will continue to follow this track going forward.

In connection with World Water Week, we have invited a couple of guest authors. The OECD is giving a Water Finance update and reflections on the global stage, and ICIMOD, being a leading specialist on the Himalayan region, is contributing with a chapter on the water ecosystem around the Himalayas, a system supplying more than a billion people with their daily water access, which is currently under stress.

Additionally, SEB, Germany's GIZ and the UN educational centers UNITAR and PAGE have co-developed a publicly available basic sustainable finance e-learning module. We have included a reflection in this publication and I would like to highlight the importance and appreciation of GIZ driving these kinds of initiatives.

Lastly, we have had 2 colleagues working for 6 weeks with the EU TEG taxonomy to develop an assessment tool for various strategies and asked them to give a personal reflection on how it is to work with the 414 page taxonomy.

Enjoy your Reading

Christopher Flensburg

Head of Climate and Sustainable Finance



# Transition update

## Stall warning from renewable investment

**Thomas Thygesen**

**Editor**

Head of Strategy, Head of Research,  
Climate & Sustainable Finance  
[thomas.thygesen@seb.dk](mailto:thomas.thygesen@seb.dk)

**Elizabeth Mathiesen**

**Senior Strategist**

SEB Markets Research  
[elizabeth.mathiesen@seb.dk](mailto:elizabeth.mathiesen@seb.dk)

The transition to a emission free energy system remains on a trajectory resembling that of earlier technological revolutions with falling prices and rapid volume increases reinforcing each other. This suggests that by the first half of the 2040s, renewable energy will supply 50% of all the energy we use.

However, from a climate crisis perspective we need to be at zero net emissions by 2050, so even this optimistic scenario will ultimately be too slow. Meanwhile, there are now short-term warning signals as the investment in new renewable energy production has been falling in the 2018 and 2019. That is an indication that the cost advantage of renewables still isn't large enough for market forces to attract the necessary investment on their own, which means we will need political support to mobilize capital for investment that could also drive prices down faster.

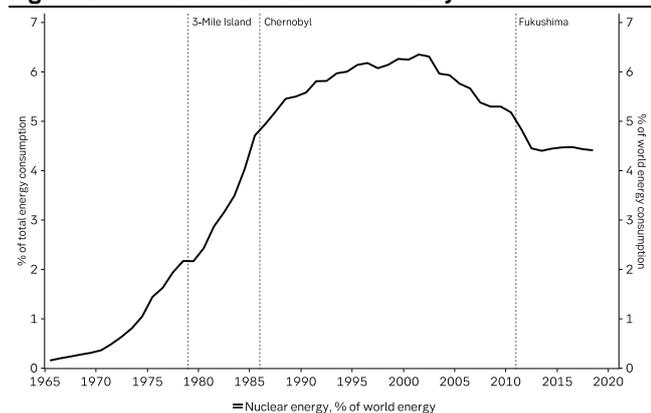
The EU's new taxonomy framework is a step in that direction. The aim is to expand the supply of sustainable financing by expanding the range of investments that are identified as transition drivers and also directing the capital towards the parts of the economy where emissions currently are high. This is the starting point for a significant expansion in both supply of and demand for sustainable financing. Over the coming years, this is likely to increase the pace of the transition process, but the move to include more shades of green also raises some challenges for investors.

### Transition still on a powerful long-term trajectory

From a structural perspective, the energy transition story continues to look strong. The diffusion of renewable energy and the complementary technologies around it follow the same S-curve pattern and show the same learning curve characteristics as earlier technology revolutions.

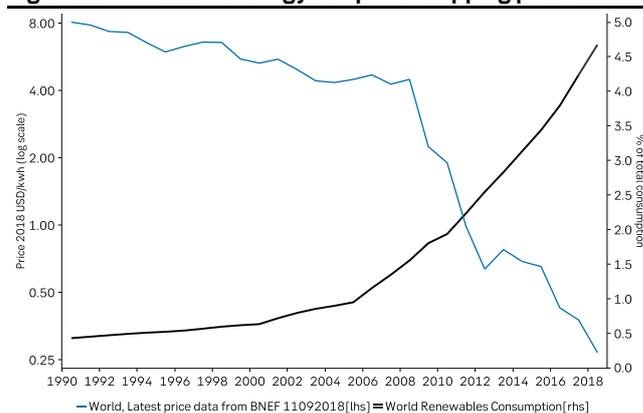
After rapid gains over the past decade, the renewable share of total primary energy consumption is now close to 5%, a level similar to nuclear power's share in the early 1980s. In electricity generation alone, renewables have reached close to 30%. In Europe, USA and China renewable share of total energy consumption is now 4-9%, roughly comparable to where nuclear peaked. Meanwhile, prices continue to decline for both wind and solar power, suggesting the structural drivers are intact.

**Figure 1: Nuclear S-curve died in the early 80's**



Source: Macrobond, SEB

**Figure 2: Renewable energy has passed tipping point**



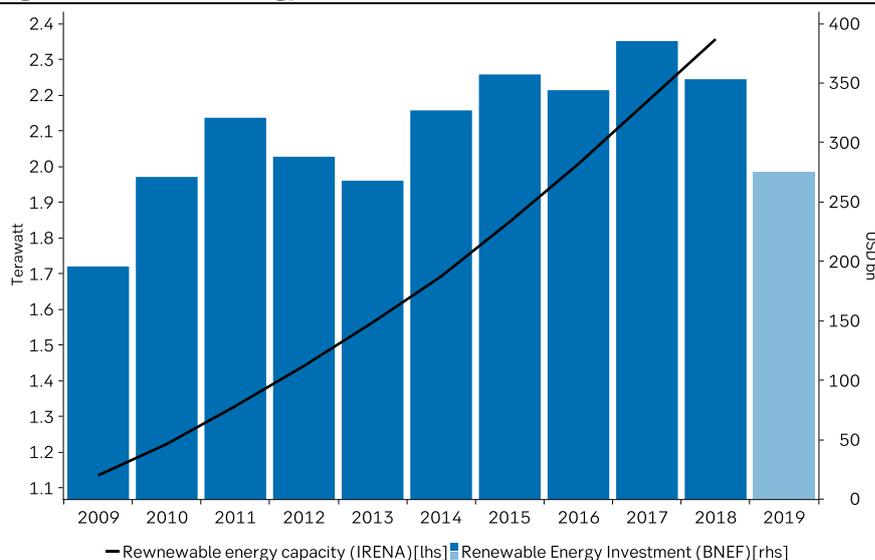
Source: Macrobond, SEB

Complementary technologies like storage also continue to exhibit the combination of rising volumes and collapsing prices that characterizes disruptive technological change. The cost of energy storage is falling as fast as the energy itself, and the EV share of auto sales is seeing exponential gains, not least in China, where it has now reached 5% in less than a decade.

**2019 shows signs of stalling**

While the cost of renewable energy continues to decline and the market share is still rising, there are some warning signs as well, suggesting that it is not accelerating fast enough. The first half of 2019 thus saw a continued decline in global investment in renewable energy, led by China, which suggests the economic drivers of the transition still aren't strong enough to stand alone.

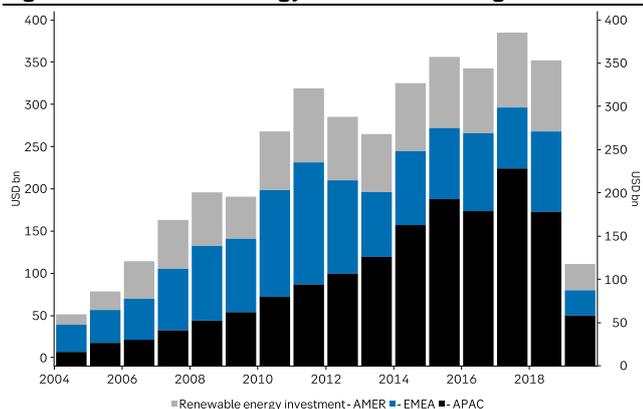
**Figure 3: Renewable energy investment lower in 2019**



Source: IRENA and (Bloomberg) BNEF

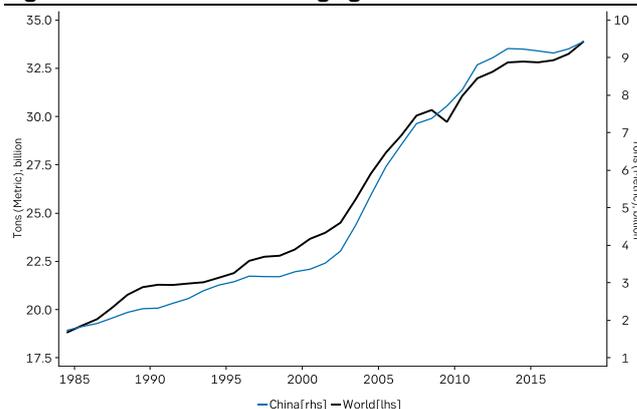
According to BNEF, China's investment in renewable energy fell 39% to \$28.8 billion in H1, taking global investment down by 14% to \$117.6 billion. China installed only 11.4GW of new solar capacity, implying a sharp slowdown from full-year 2018 installation of 44.1 GW. According to BNEF, this is due to a change in policy from fixed subsidies to an auction-based system, and investment is likely to pick up again as the new system is phased in. However, it was not just China's investment that declined. In the U.S. and Europe, investment volumes fell 6% and 4%, respectively, in the first half of 2019.

**Figure 4: Renewable energy investments in regions**



Source: SEB analysis based on Bloomberg (BNEF)

**Figure 5: Emissions start rising again**



Source: Macrobond, SEB

There underlying trend remains positive. Renewable energy production is still growing because falling prices mean you get more output for the same amount of dollars every year. Nonetheless, the slowdown in investment raises the risk that the increase may be dampened in the coming years.

There are also signs that the improvement in global CO2 emissions is stalling. After moving sideways for a couple of years, they have started rising again in 2018. Obviously renewable energy production is not the only factor here, energy efficiency in other sectors and overall growth in energy consumption are also key factors when it comes to total emission levels.

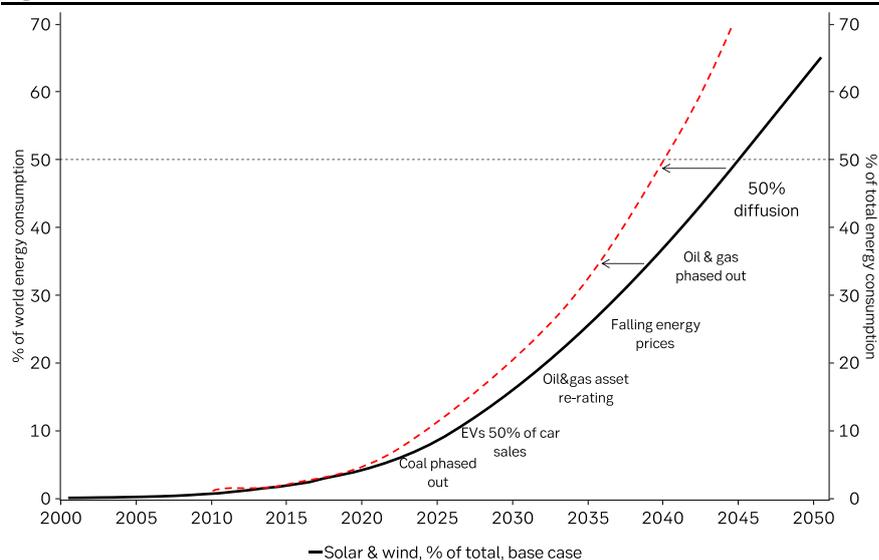
However, when we add it all up, that just strengthens the conclusion that the current pace of the transition simply isn't fast enough to fit with the 2050 Paris agreement goals.

### Fast, but not fast enough

This highlights a deeper problem. Even if we assume that the transition follows the same 30-30-30 model as earlier technology revolutions, the same kind of breath-taking diffusion as markets produced with IT or autos will only take the renewable energy share to 50% in the early 2040s.

That's not good enough from a climate crisis perspective, as scientific evidence suggests we need to go to zero net emission by 2050 to cap the temperature increase at less than 1.5 degrees. The recent slowdown may be temporary, but it is an indication that the cost advantage for renewables, while positive, is not large enough to shift capital into sustainable technologies fast enough.

**Figure 6: If we need to reach 100% in 2050, we have to lift capex faster**



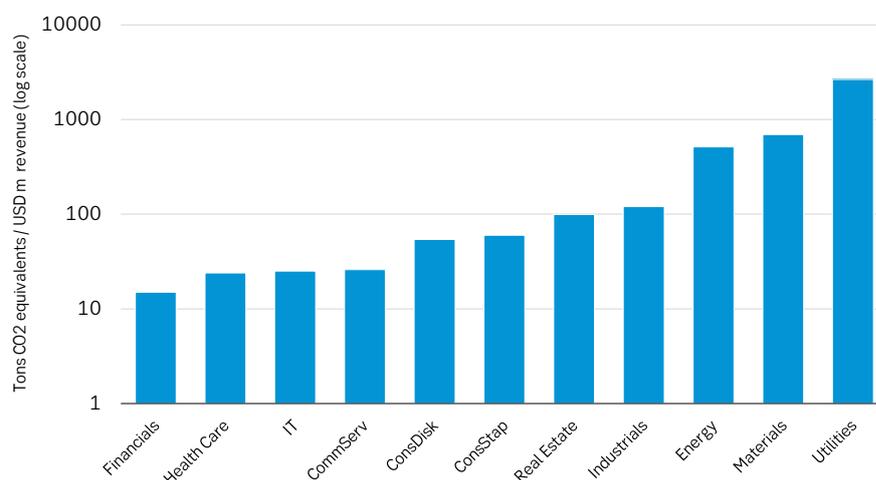
Source: Macrobond, SEB

This is not necessarily an insurmountable obstacle. The beauty of the learning curve is that faster investment today will lead to lower prices tomorrow, which in turn could attract even more private sector investment driven by pure cost competition. However, if the current pace of investment is insufficient, then it will also take longer for prices to decline to levels where the private sector starts to really pick up the mantle. This suggests that we need an initial boost to investment to come from policy drivers in order to reach a pace that is consistent with the Paris agreement goals.

### A new regime for sustainable finance

What we need to speed up the power of the learning curve effect is not just subsidies and public investment, which are likely to be hampered by budget concerns in most part of the world, but also regulation and market incentives designed to mobilize private capital flows. It is in this light we should look at the new initiative from EU commission in the shape of the taxonomy and the full package of recommendations and initiatives form part of it.

**Figure 7: Carbon Intensity by sectors**



Source: Impact Metric Tool, SEB Solutions

The initiative is an innovative and pragmatic attempt to mobilize private capital and speed up the transition. The big change is the key assumption that in order to reduce emission levels fast, the investment has to take place in sectors that have high emissions. The idea is to significantly expand both the supply of and demand for sustainable finance by directing it towards sectors that may not be green today in the traditional sense of the word and also expands the range of investments to include 'transition' investments that are a step on the way towards lower emissions but initially won't take us all the way.

The clear intention is to create a race within the high-emission sectors, forcing companies to compete on reducing emission levels using technology and encouraging sustainable investors to fund these investments and reward the companies that lead the way.

This may be a challenge for some existing investors that it is no longer deep green only, and it will require both clear definitions of the investments that are eligible as well as strong enforcement. However, in terms of unleashing the positive forces, it is a pragmatic and well thought out set of proposals, and we think it will point the way for future regulation, even if there are still many kinks and flaws from a practical perspective.



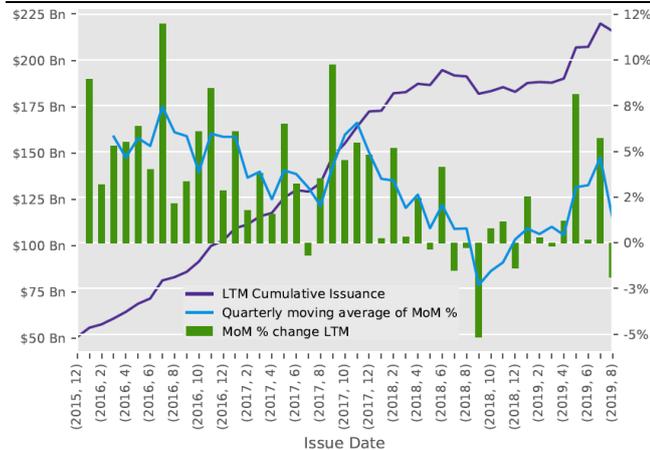
**Kristoffer Nielsen**  
 Climate & Sustainable Finance  
[kristoffer.nielsen@seb.se](mailto:kristoffer.nielsen@seb.se)

**Thomas Thygesen**  
 Editor  
 Head of Strategy, Head of Research,  
 Climate & Sustainable Finance  
[thomas.thygesen@seb.dk](mailto:thomas.thygesen@seb.dk)

# Green Bond Market Update

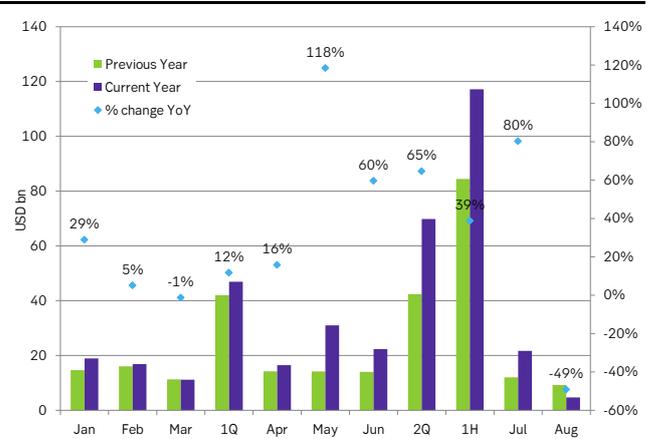
The Green Bond market continued a positive trend over the summer with July delivering a total issuance of USD 21.7bn, which significantly outperforms the previous year. This was primarily due to issuance in the corporate, financial and SSA sector. July's positive developments have not been as strong in August with USD 4.7bn as of 28 August, but it should be noted that the full data set for the current month will not be available until early September. The market at YTD 28 August 2019 is nonetheless up 29% Year-over-Year (YoY) and with total issuance already passing the USD 140bn it is comfortably on track to match our more bullish outlook for the full year in the range of USD 210-240bn (see Figure 10).

**Figure 8: Green Bond Issuance – Last 12M (USD bn)**



Source: SEB analysis based on Bloomberg (BNEF)

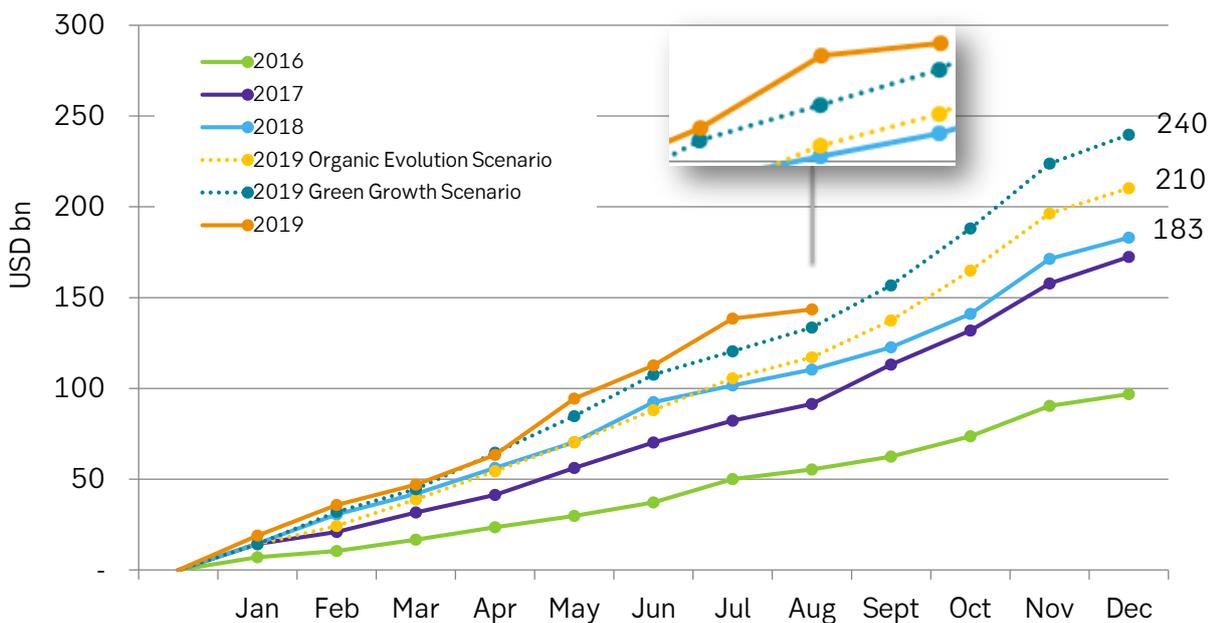
**Figure 9: Issuance previous year comparison**



Source: SEB analysis based on Bloomberg (BNEF)

As Figure 12 indicates, the financial and corporate sectors continue to dominate the market in 2019 with shares of total Green Bond issuance up until

**Figure 10: Cumulative annual Green Bonds issuance & scenarios, USD 143.5 billion by 28 August 2019**

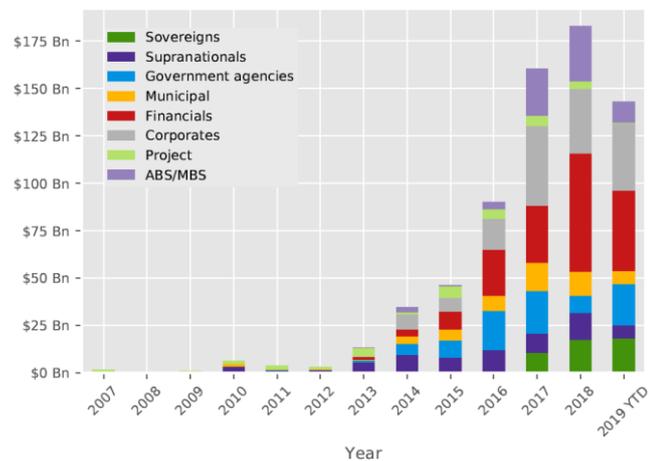


Source: SEB analysis based on Bloomberg (BNEF) and SEB data

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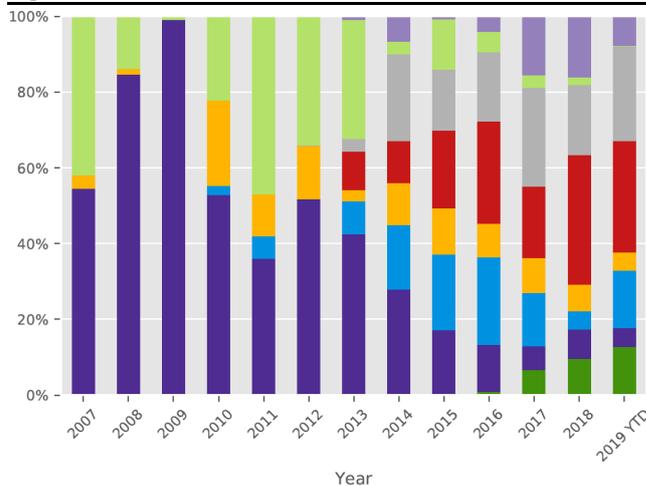
YTD 28 August at 30% and 25%, respectively. However, the market is diversified in terms of sectors and it is encouraging to see government agencies increase their share of the market, with a significant increase of issuance from Asian and European countries.

**Figure 11: Sector: Green Bond market growth (USD bn)**



Source: SEB analysis based on Bloomberg (BNEF)

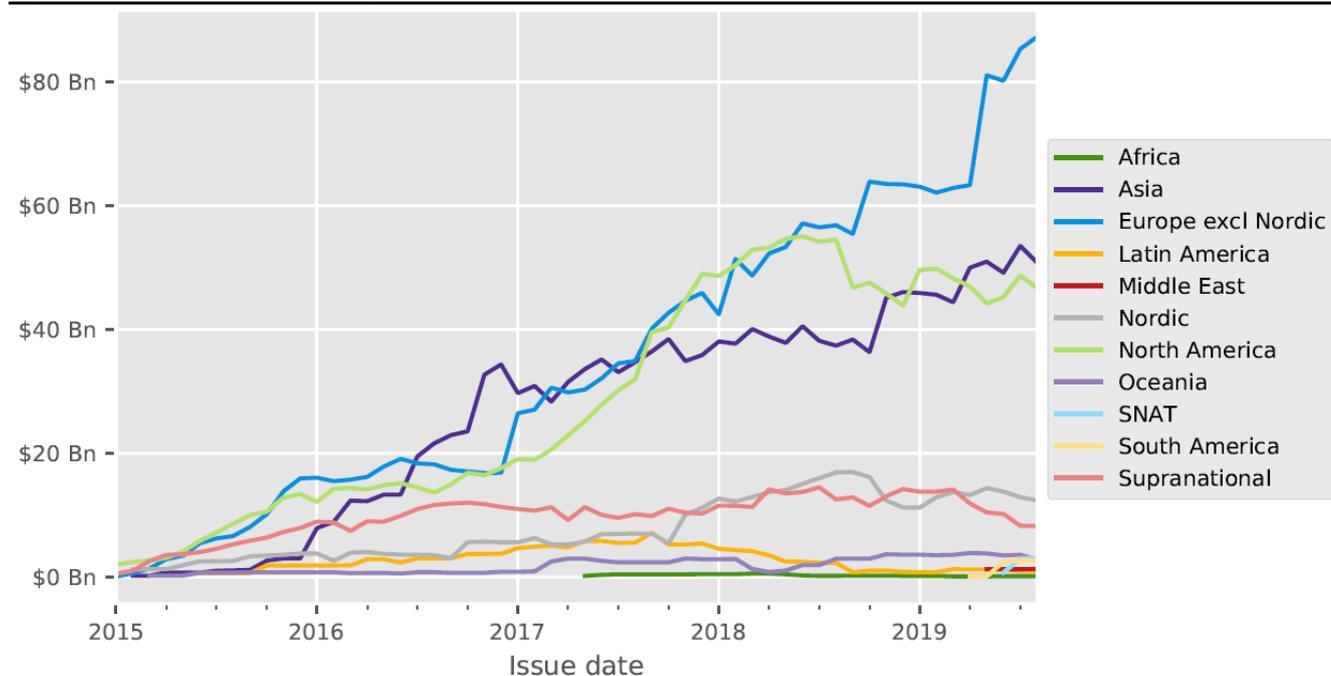
**Figure 12: Sectoral evolution (% share of annual issuance)**



Source: SEB analysis based on Bloomberg (BNEF)

Europe continues to be a driving force in the Green Bond market and accounted for 36%, 32% and 58% (% ex Nordic) of total issuances in June, July and August, respectively. The Asia region was particularly strong in July with over 30% of total issuance, but was less prominent in the other summer months and accounted for 19% of the total market in the June-August period as a result. The US market continues to be dominated by the MBS sector and is consistent at around 25% of the total market. As expected, Nordic issuance was lower than usual in the summer months at 5% of total issuances in the June-August period, KBN issuing 2bn SEK as the largest contributor.

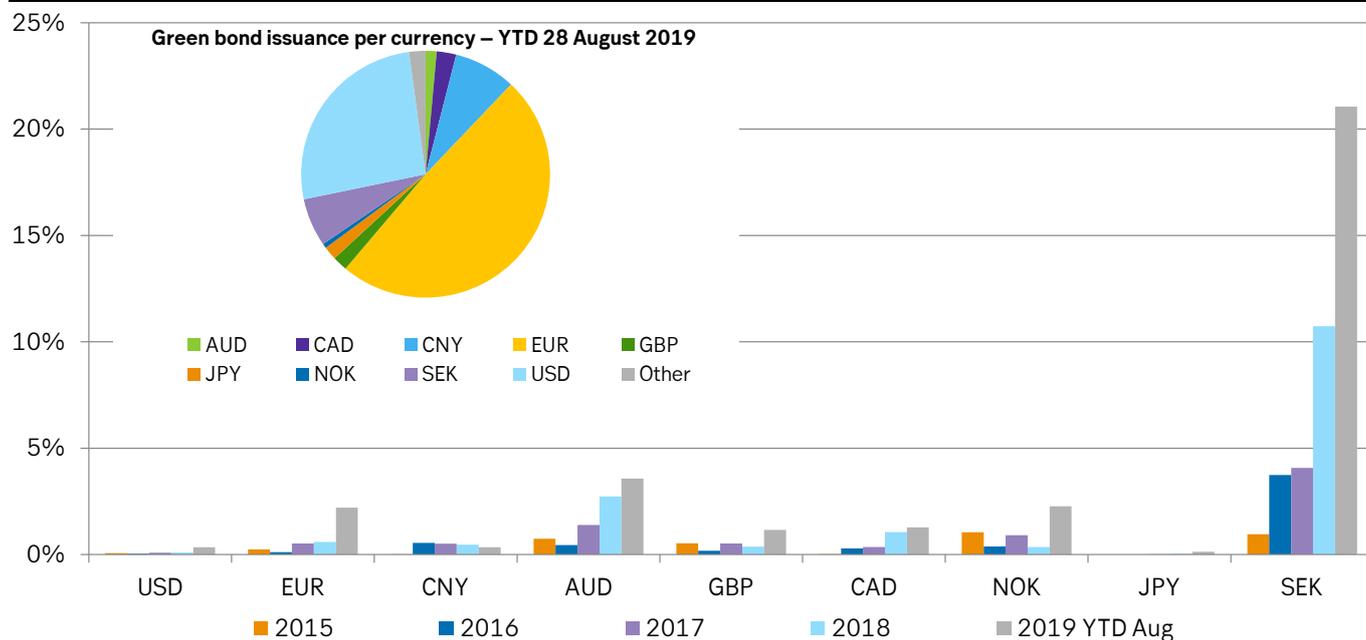
**Figure 13: 2015-2019 LTM moving sum of issuance (USD)**



Source: SEB analysis based on Bloomberg (BNEF) and SEB data

On the other hand, the CAD is emerging as a large issuance currency with IBRD issuing 1,5bn, EDC 500mm and the City of Ottawa 302mm. The GBP is also emerging as a new currency for large issuance with EIB issuing 800mm and KFW 650mm.

**Figure 14: Green Bond issuance as a percentage of total bond issuance**



Source: SEB analysis based on Bloomberg (BNEF) and SEB data

The Financial sector has raised USD 42.16bn through Green Bonds so far in 2019, which represents a YoY increase of 35%. The largest issuance within the financial sector came from China with the Industrial Bank Co Ltd issuing a CNY 20bn (USD 2.90bn) Green Bond in July. Besides the issuance from the Industrial Bank Co Ltd, the largest issuances in the period June-August 2019 were BBVA from Spain with a EUR 1bn (USD 1.13bn) Green Bond in June and Societe Generale with a EUR 1bn (USD 1.12bn) Green Bond in July. With these issuances, China, France and Spain have significantly increased their share of the financial market in the period June-August 2019. In fact, China has accounted for more than one quarter of all Green Bond issuance in the financial sector so far in 2019, while Europe excl. the Nordics accounts for 29%, primarily through issuances from Germany, Italy and France. Among large transactions in the financial sector, noteworthy transactions include Bank Nova Scotia issuing USD 500mm and LBBW raising EUR 500mm.

The Corporate sector has raised USD 35.81bn in Green Bonds format so far in 2019, which accounts for 25% of total Green Bond issuance YTD 28 August 2019. This represents a YoY increase of 78%. The two largest issuances of 2019 in the corporate sector came with Engie SA from France (USD 1.68bn) in June and E.ON SE from Germany (USD 1.66bn) in August. Both of these issuances were divided into two EUR 750m tranches and France and Germany has significantly increased their share of the corporate Green Bond market since June as a result. European countries and North America are still dominating the corporate sector with the United States (16.9% of total corporate Green Bond issuance), France (10.7%), Italy (10.0%), Spain (7.7%) and Germany (7.0%) accounting for more than half of total corporate issuance so far in 2019. Within the corporate space, the energy sector has been very active with ENBW selling Euro 500mm two times, Greenko Solar raising USD 950mm and the Public services of Colorado (utility service provider) issuing USD 550mm.

The government agency sector has raised USD 21.49bn through Green Bonds so far in 2019. This represents a YoY increase of 293% and the government agencies sector has ballooned to an impressive 15.1% of total Green Bond issuances YTD 2019. Government agencies from multiple countries across Europe and Asia have issued Green Bonds, including the public transport operators SNCF Reseau and Regie Autonome des Transports Parisiens in France, Ferrovie dello Stato Italiane and Russian Railways, export/development financing issuers KfW in Germany, Svensk Exportkredit, Export Development Canada and Korea Development Bank, and municipality or real estate finance issuers including Komuninvest, Minicapility Finance PLC from Finland, Societe du Grand Paris PEIC and Japan Housing Finance Agency. The largest issuer in the period June-August was SNCF Reseau with a Green Bond issue of USD 1.70bn. In addition, KfW issued a Green bond of USD 808m and Ferrovie dello Stato Italiane SpA has issued a Green Bond of USD 790m. The largest countries in terms of issuance from the government agency sectors were France (32.4% of total government agencies issuances) and Germany (26.5% of total government agencies issuances), but these are only part of a wider European trend and have been joined by Green Bonds issued by government agencies in Italy, The Netherlands, Sweden, Norway, Spain, Finland, Switzerland and Russia).

The sovereign sector has raised USD 18.18bn in Green Bonds so far in 2019, representing 12.7% of total Green Bond issuance YTD 28 August 2019. YoY was strong at 29% with sovereign Green Bonds issued by Belgium, Chile, France, Hong Kong, Indonesia, the Netherlands, Nigeria and Poland so far in 2019. In the period June-August, the largest sovereign issuer was Chile with an issuance of USD 1.42bn in June 2019 followed by a EUR 861m (USD 978bn) issuance a week later. Belgium, Chile and Nigeria also issued sovereign Green Bonds in this period.

The ABS/MBS sector has raised USD 10.82bn through Green Bonds so far in 2019. June and July have been the strongest months of the year with MBS Issuance from Fannie Mae alone totaling USD 2.30bn and USD 2.38bn, respectively. Fannie Mae dominates the US market, accounting for 85% of ABS/MBS issuances by YTD July 2019. August figures have not yet been released, but it will be interesting to see if the growth of mortgage backed securities continues in the second half of 2019.

#### **Publicly Announced Green, Social & Sustainability Bond Pipeline<sup>1</sup>**

- Orkuveita Reykjavíkur (ISK)
- Essex County Improvement Authority (USD)
- Sparebanken Sogn og Fjordane (NOK/SEK)
- Polymetal Weighs (green financing)
- Caixabank (Sustainable bond framework roadshow)
- Denso Corp. (Sustainability bond framework roadshow)

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<sup>1</sup> As of 28 August 2019



**Anne Kristin Kästner**  
Sustainable Investments  
SEB Solutions  
[annekristin.kastner@seb.se](mailto:annekristin.kastner@seb.se)

**Sofia Wiklund**  
Sustainable Investments  
SEB Solutions  
[sofia.wiklund@seb.se](mailto:sofia.wiklund@seb.se)

# Reflections on Developing a Quantitative Tool on Basis of the EU Taxonomy

During this summer, we have been digging deep into the recently released EU Taxonomy on Sustainable Finance. The result of our summer project is a quantitative, scalable tool that measures the Taxonomy-aligned share of any given portfolio of listed equities. The two months of work have given many insights, but also a fair bit of frustration. Here, we will share our main reflections about the Taxonomy report by the EU Technical Expert Group (TEG).

When scoring a portfolio according to the Taxonomy, the first step is to identify all eligible economic activities. The result of this screening is surprising. Some funds marketed as sustainable invest as little as 0.1% in activities that are covered by the Taxonomy. The average of eligible activities lies around 12%<sup>2</sup>. In general, regular funds have a greater share of revenue from eligible activities than sustainable alternatives. According to our results, about 20% of MSCI ACWI is eligible for the Taxonomy. The key to explaining this is the portfolio-specific sector distribution. Many sustainable funds are excluding carbon intensive sectors and have a heavy sector tilt towards e.g. health care and finance. This gives them the desired low carbon footprint; however, this strategy is not in line with the Taxonomy that instead focusses on activities that actively contribute to a transition to an emission free society. Many of the industries included in the Taxonomy are among the most heavy emitters, but critical to a emission free economy. Steel is needed for wind turbines and energy-efficient buildings, but investments need to push the production to be as carbon efficient as possible. When the Taxonomy gains traction, we are facing a paradigm shift in sustainable investment strategies - moving from Exclusion to Impact and Best-in-class-investing.

The second step of the scoring is the assessment of each eligible activity according to the thresholds set by the TEG. The assessment of some of the thresholds is very advanced and requires both subject knowledge and extensive data. Measuring a regular-sized portfolio by hand might not just take a summer, but much longer. A fund manager asking a company in the agriculture sector, "how much the above and below ground carbon stocks has been increasing the last year"<sup>3</sup> will surely cause some confusion. Lack of data and qualitative thresholds has been the main challenge. With the data currently provided, we were not able to directly implement one single threshold without translation to measureable approximations. Creating these approximations was the by far the most time consuming part of the project. This was further complicated by the fact that nuance and precision in the differentiation between activities are sometimes suffering from shortcomings in the industry classification. Moreover, it is important to remember that coverage for the available data points is often poor and therefore, estimations are needed. The TEG highlights that "... full implementation of the Taxonomy cannot be achieved without improved reporting from companies, coupled with better use of other data sources"<sup>4</sup>. However, we would not only see this as a

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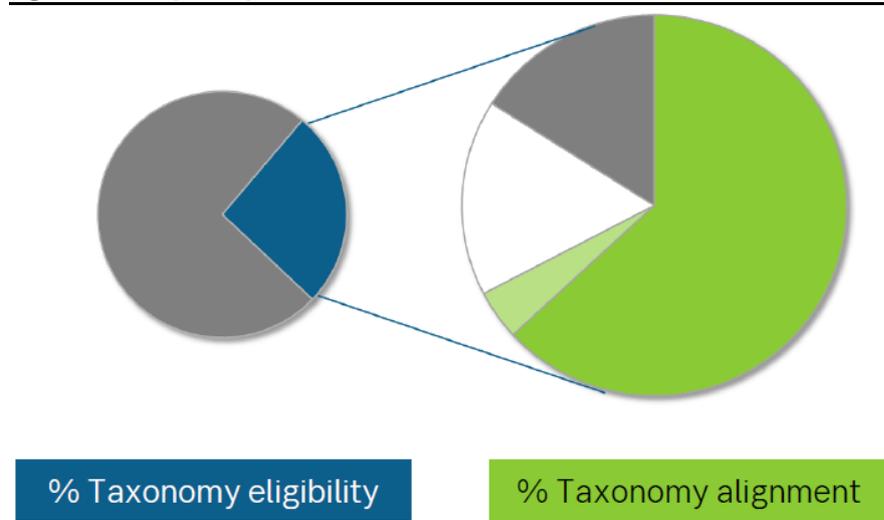
<sup>2</sup> Average from all sustainable funds tested with the tool

<sup>3</sup> Activity 19.1 Growing of Perennial Crops, Criterion 2b

<sup>4</sup> EU Taxonomy 2019, p. 74

shortcoming of the Taxonomy. Sustainable investing requires good quality ESG data, and the Taxonomy will be a strong incentive to improve reporting.

**Figure 15: Analysis of portfolio breakdown**



Source: SEB Solutions

The main output of the analysis is the percentage of the portfolio that is Taxonomy-aligned, which is very small for most sustainable funds, ranging between 0-15%. We have realized that our biggest work was not the implementation of the tool but is the communication the results and implications of our project. First of all, the Taxonomy-aligned share of a portfolio is often carelessly called “green”; however, the TEG report focuses only on activities that actively contribute to either climate change mitigation or adaptation. Activities that contribute to clean water and high biodiversity are not included in the aligned share, neither are activities that combat poverty or provide educational services. Non-aligned activities are therefore not necessarily “brown” or “bad” activities. Secondly, and as a consequence of the previous statement, it is not given that investors should strive for 100% Taxonomy alignment. The natural instinct might be “the greater, the better”, but a 100% Taxonomy aligned portfolio would mean a heavy sector tilt. Furthermore, it would not address other important aspects of a sustainable society.

In conclusion, many challenges remain for the full implementation, not least the lack of data, and the industry needs some time to get used to the possibilities and limitations of this document. Despite these challenges, the TEG makes a very strong and important statement: Turning a blind eye to the path that lies ahead of us and focusing on the aggregated carbon footprint of a portfolio will not help us to become carbon neutral in 2050. We personally feel hopeful for development in this direction.



# Making Blended Finance Work for Water and Sanitation

## Kathleen Dominique

Environmental Economist

OECD

[Kathleen.dominique@oecd.org](mailto:Kathleen.dominique@oecd.org)

## Wiebke Bartz-Zuccala

Policy Analyst

OECD

[wiebke.bartz-zuccala@oecd.org](mailto:wiebke.bartz-zuccala@oecd.org)

## Patrick Dougherty

Policy Analyst

OECD

[patrick.dougherty@oecd.org](mailto:patrick.dougherty@oecd.org)

## Chloé Desjonquères

Policy Analyst

OECD

[chloe.desjonqueres@oecd.org](mailto:chloe.desjonqueres@oecd.org)

Read the Publication and Policy

Highlights: <https://oe.cd/bf-water>

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## New OECD Report on Unlocking Commercial Finance for SDG 6

**Global financing needs for water-related investment are significant and increasing.** Globally, 2.1 billion people lack access to safely managed drinking water services<sup>5</sup>, while 4.5 billion lack access to sanitation compatible with the water and sanitation targets set by the Sustainable Development Goals (SDGs)<sup>5</sup>. The economic benefits of investing in water security (managing the impact of “too much”, “too little” and “too polluted” water as well as maintaining healthy ecosystems) could exceed hundreds of billions of dollars annually<sup>6</sup>. Yet, despite a strong economic case for such investment, financing persistently falls well short of needs. Projections of global financing needs for water infrastructure alone range from USD 6.7 trillion by 2030 to USD 22.6 trillion by 2050<sup>7</sup>. Further, growing pressures on water resources degrade water quality and increase scarcity, as competition for the resource among various uses (cities, industries, farms and the environment) intensifies.

### **Water-related investments are key for sustainable development, inclusive growth and the security of investments in a vast range of industries.**

Beyond SDG 6, the dedicated Sustainable Development Goal on the sustainable management of water and sanitation for all, water-related investments have spill-over effects on other economic sectors and development objectives, including those on food security, healthy lives, clean energy and marine and terrestrial ecosystems. This reflects the wide variety of water-related investments, including supporting reliable freshwater supply for cities, industries such as energy generation or agriculture; reducing pollution; providing drinking water, sanitation and wastewater treatment services; protecting against risks of floods, etc.

### **Public sources of finance alone will not be sufficient to achieve water security in the future.**

In the past, water-related investments have historically been financed by the public sector, with concessional finance playing an important role in developing countries. Future financing needs by far exceed the capacity of public finance, in both developed and developing countries. Investment needs are driven by economic development, urbanization and population growth. They are also driven by populations' expectations in terms of security, and the stringency of environmental and other policies; as well as by a changing climate, which generates uncertainties about water demand and availability. On-going OECD work suggests that several European countries will need to increase the level of investments in water security by 20% or more. It is unlikely that governments (national and local) will redirect scarce public finance to meet these needs.

<sup>5</sup> WHO-UNICEF (2017), *Progress on drinking water, sanitation and hygiene: 2017 update and SDG baselines*

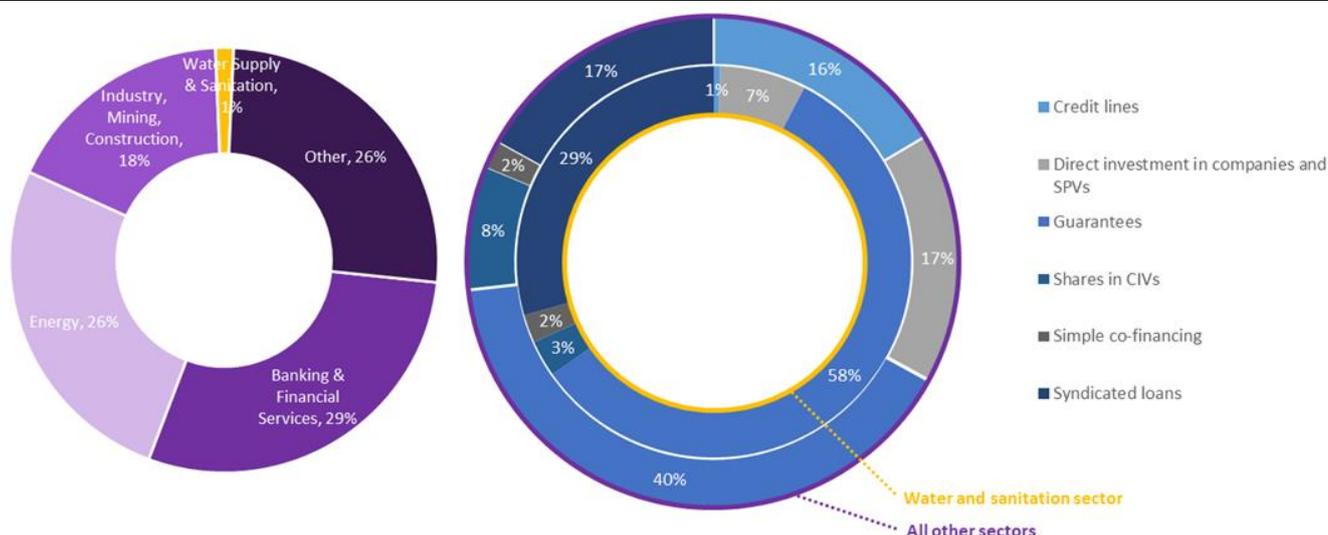
<sup>6</sup> Sadoff, C. et al. (2015), *Securing Water, Sustaining Growth*, report on the GWP-OECD Task Force on water security and sustainable growth

<sup>7</sup> Winpenny, J. (2015), *Water: Fit to Finance? Catalysing National Growth Through Investment in Water Security*, report of the High Level Panel on Financing Infrastructure for a Water-Secure World, World Water Council, OECD

**Blended finance can play a critical role in mobilising commercial finance and strengthening the financing systems on which water and sanitation investments rely.** Blended finance is the strategic use of development finance to mobilise additional finance towards sustainable development in developing countries<sup>8</sup>. By deploying development finance in a way that addresses investment barriers preventing commercial actors from providing capital, blended finance operates as a market building instrument that can provide a bridge from reliance on grant and other donor financing towards crowding in commercial finance over the long term.

**The amount of commercial finance mobilised by blended finance for water and sanitation is limited compared to other sectors** (Figure 16). According to OECD data, only 1.36% (USD 2.14 billion) of total private finance mobilised from 2012-17 (USD 157.2 billion) has been mobilised in the water and sanitation sector. In terms of blended finance instruments, guarantees mobilise 59% or USD 1.24 billion in the water and sanitation sector, followed by syndicated loans at 28% or approximately USD 0.6 billion.

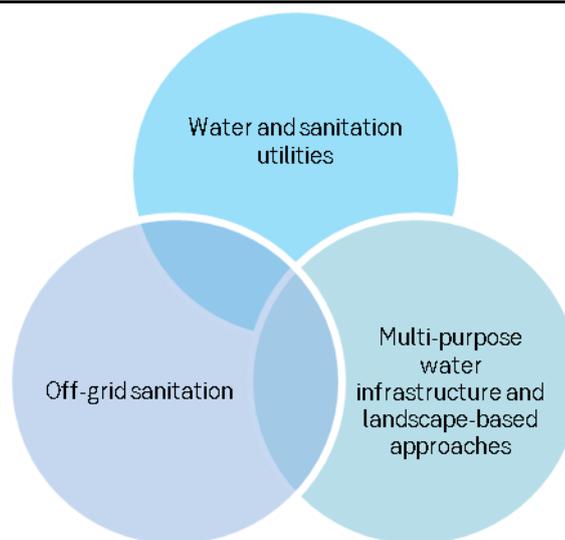
**Figure 16: Commercial finance mobilised by development finance, by sector and instrument, 2012-17**



Source: OECD (2019), *Making Blended Finance Work for Water and Sanitation: Unlocking Commercial Finance for SDG 6*, OECD Studies on Water, OECD Publishing, Paris, <https://doi.org/10.1787/5efc8950-en>

The new OECD report *Making Blended Finance Work for Water and Sanitation*, launched this week at Stockholm World Water Week, provides insights into what has worked so far in terms of blended finance for water-related investments; and looks into the potential to scale up blended finance approaches to apply to a broader range of investment types and contexts. The research, supported by the Swedish International Development Co-operation Agency (SIDA), distils lessons learned and emerging guidance to scale, and exploit the full potential of blended finance to deliver on water security. It focuses on three water and sanitation subsectors - (1) water and sanitation utilities, (2) off-grid sanitation and (3) multi-purpose water infrastructure (MPWI) and landscape based approaches - selected to provide distinct perspectives based on experience with blended finance to date, requirements for blended finance to successfully emerge, and potential for the use of different blended finance instruments and mechanisms.

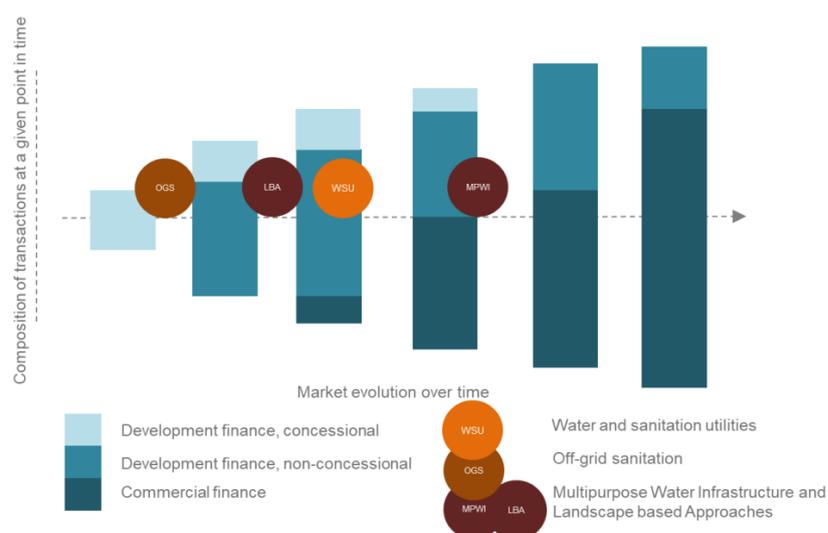
<sup>8</sup> OECD (2018), *Making Blended Finance Work for Sustainable Development Goals*

**Figure 17: The three water and sanitation subsectors**

Source: OECD

**Blended finance models to mobilise additional commercial finance in the water and sanitation sector are emerging but have not reached scale.** The analysis of water and sanitation shows that this assessment varies by sub-sector given the heterogeneity of the operating models and the risk-return profile of investment opportunities in each of the sectors. Within this spectrum of blended financing, the three sub-sectors are characterised by transactions that are reflecting different stages of financial market building (see Figure 18). Blended models to finance utilities are emerging as an appropriate tool for creditworthy or near creditworthy utilities to move away from purely concessional donor finance towards market financing. For the off-grid sanitation subsector and technologies, however, grants and concessional financing are predominant, whereas blended finance models that mobilise commercial financing are largely absent. In contrast, MPWI is a subsector where blended finance models are an established financing instrument mobilising commercial finance at scale. For landscape-based approaches, blended finance can potentially operate as a fit-for-purpose financing instrument as it brings together different stakeholders responding to their individual investment preferences, but developments remain at a very early stage.

**Commercial financiers can play a greater role in financing water and sanitation.** When implemented in conjunction with efforts to improve the enabling environment, blended finance is designed to enable stand-alone commercial investment in the long run, by providing confidence, capacities and a track record in markets where commercial investors are not yet investing. Blended finance can thus add value first and foremost by shifting funds that are currently not directed to sustainable development to countries and sectors that have significant investment needs in order to deliver on the SDGs. In doing so, blended finance enables commercial investors to develop a track record of operating in the sector by altering the risk-return balance in a way that the commercial sector is willing to invest. Due to their transitory nature, blended finance models should mobilize more commercial finance over time. In parallel, a larger role for commercial actors can enable stronger financial systems by encouraging accountability and transparency, as well as new ways of addressing existing social and environmental challenges.

**Figure 18: Current state of transaction level mobilisation and market evolution**

Source: OECD (2019), Making Blended Finance Work for Water and Sanitation: Unlocking Commercial Finance for SDG 6, OECD Studies on Water, OECD Publishing, Paris, <https://doi.org/10.1787/5efc8950-en>

**Evidence supports the potential of blended finance in unlocking commercial finance for water and sanitation in developing countries.** In Jamaica, a USD 3 million grant unlocked a USD 12 million loan for the National Water Commission to finance a pipeline of utility projects to reduce pollution from untreated wastewater and increase access to piped water supply and sewer connections nationally. In India, Water.org's WaterCredit initiative supports microfinance institutions in the disbursement of loans for off-grid water or sanitation projects, with a view to making the population of India open defecation-free. In Uganda, the Kalangala Infrastructure Investment Services is a multi-donor public-private-partnership responsible for the investment and maintenance of basic infrastructure to improve access to water, transport safety, and enable more reliable renewable electricity. In Latin America, WaterFunds promotes the pooling of public and private financing in support of sustainable watershed management through nature-based solutions, while creating incentives to engage in conservation and climate adaptation practices.

**The OECD will continue to increase the evidence base on financing water, including blended finance, as well as engage in dialogue with governments, financiers and experts building on the report's findings.** A relevant forum is the OECD [Roundtable on Financing Water](#), which engages a diversity of actors – governments and regulators in developed, emerging and developing economies, private financiers (e.g. institutional investors, commercial banks, asset managers, and impact investors), development finance institutions, multi-lateral and bi-lateral donors, corporates, philanthropies, international organisations, academia and civil society organisations – focused on finding novel ideas and solutions. In addition, the OECD is promoting a co-ordination process of various blended finance actors and initiatives under the Tri Hita Karana Roadmap for Blended Finance, an international framework for mobilising additional commercial capital towards the SDGs.

Read the Publication and Policy Highlights: <https://oe.cd/bf-water>

For more information: <https://oe.cd/water-roundtable> | <https://oe.cd/blended> | <https://oe.cd/social-impact>

Contacts: Kathleen Dominique ([Kathleen.Dominique@oecd.org](mailto:Kathleen.Dominique@oecd.org)) & Wiebke Bartz-Zuccala ([Wiebke.Bartz-Zuccala@oecd.org](mailto:Wiebke.Bartz-Zuccala@oecd.org))

# ICIMOD Protecting the Pulse of the Planet with Green Investments in the Hindu Kush Himalaya

## Basanta Shrestha

Director of Strategic Cooperation  
International Centre for Integrated  
Mountain Development  
[basanta.shrestha@icimod.org](mailto:basanta.shrestha@icimod.org)

## David Molden

Director General  
International Centre for Integrated  
Mountain Development  
[david.molden@icimod.org](mailto:david.molden@icimod.org)

[www.icimod.org](http://www.icimod.org)

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The Hindu Kush Himalaya, the “water towers of Asia”, are faced with a crisis that threatens the water security of a fifth of humanity. The full scale of it is not immediately clear because this is a slow-onset crisis. According to the [Hindu Kush Himalaya Assessment](#), even if carbon emissions are rapidly cut and countries succeed in limiting global warming to 1.5 °C, 36 percent of the glaciers in the HKH will have gone by 2100; if emissions are not cut, temperatures could rise by 5-6 °C and we could lose two-thirds of the glaciers.

These glaciers and snowfields are in fact the water storage for 250 million people who live in the hills and mountains of the HKH, and 1.65 billion people downstream who depend on the 10 great river systems that flow from these peaks. Meltwater from glaciers and snowfields is particularly crucial for lean season flows in the rivers, energy production, drinking water and agricultural production. Their loss will cause serious water stress and has the potential for conflict and dislocation in some of the most densely populated areas in the world.

Already, erratic monsoons are leading to extreme weather events across the HKH and downstream. Springs across the HKH are drying up or discharging less water, leading to severe water stress in many settlements in the mid-hills. What happens in the mountains eventually affects agriculture in the plains, threatening the breadbaskets of Asia and food security in some of the world's most populous countries. For instance, food crops grown in the Indo Gangetic Plain alone feed some 500 million people in India, or 40 percent of its population.

Then there is energy poverty. Despite having huge hydropower potential of ~500 GW, the HKH remains energy poor. More than 80% of the rural population in HKH countries, a large part of whom live in mountain areas, rely on biomass for cooking and about 400 million still lack access to electricity. We know now that pollution from the use of biomass fuels, from transport, agriculture and industry, both in the mountains and in the adjoining plains, interferes with and influences monsoon circulation and rainfall, and that black carbon accelerates the melting of glaciers.

Slow onset-crises also present opportunities for course correction and investment. A recent comprehensive scientific report, the [Hindu Kush Himalaya Assessment](#), recommends two potential pathways for the prosperity of the HKH – large scale sustainable development investment with regional cooperation, and bottom-up investment with local and national cooperation. There is a desperate need for investments in infrastructure for transportation and energy. But for sustainable development there is also a need for community led investments that address equitable economic growth, gender equality, and a sustainable environment.

There is an urgent need for green and inclusive development pathways and for climate smart, low carbon, environmentally sound and disaster resilient development in the energy, building, transportation, agriculture, water management, solid waste management sectors in the Hindu Kush Himalaya that will enhance resilience and support mitigation and adaptation. However,

very limited green investments are actually flowing into the region. These investments provide a substantial opportunity for the people of the HKH, but will require special considerations of the special mountain context of the Hindu Kush Himalaya, plus the special social and political context of the region. Special partnerships with organizations who know this context are required to make green investing a success. This will be a challenge for green investments, but if we are to have a sustainable and climate resilient future, green investments must rise to the challenge.

We know that climate change is likely to impact the poor the most, worsening these water, energy and food insecurities, and increasing their exposure to disaster risk. Green investments should therefore have an explicit focus on social inclusion, so as to address the historical neglect of mountain communities and the most marginalised among them. Without this, any growth is only likely to reproduce the exclusions of the past.

The Himalayas have great clean energy potential. Solar, wind, biogas, micro-hydro, and micro-grid renewable energy technologies can be effective in various contexts. What this demands now is a clear focus on the mountains and on ensuring access to clean energy for remote mountain communities. There is great potential for investments to meet the growing energy demands of emerging towns and cities all over the HKH.

Nepal's hydropower sector, for instance, is considered to be the nation's crown jewel, a largely unexploited asset that could unlock the nation's development potential. The Government of Nepal's (GoN) current plans are to develop 6,000 MW of storage and run-of-the-river projects which will collectively produce 10,000 MW by 2026. To date, the hydropower sector has attracted most of the country's foreign direct investment. It is estimated that a medium-sized hydropower project (5,000 KW to 30,000 KW) developed by the GoN and the private sector costs an average of USD 2,800/KW and USD 1,000/KW respectively. An investment of USD 25 million will be able to finance a medium-sized hydropower project.

Some HKH countries have scaled up off-grid renewable energy initiatives that are globally recognised as successful. However, the special challenges faced by mountain communities – in terms of economies of scale, inaccessibility, fragility, marginality, access to infrastructure and resources, poverty levels and capability gaps – hinder large scale replication of several best practice innovative business models and off-grid renewable energy solutions that are making inroads into some HKH countries. This is where strategic investment can have great impact in sustainability and reducing exclusion and respond to the strong demand for decentralised renewable energy solutions and innovative financing mechanism to scale up best practices.

Agriculture's share of the GDP mix falls as countries become richer, in line with conventional industrial- and services-led growth. However, agriculture's share of GDP is still significant for countries in the HKH. In Nepal, it contributes to 35% of GDP. Agriculture is also typically the sector with the largest water use in developing countries. Given the increasing impacts of climate change, there is a need to invest in climate-smart agriculture so that food security can be ensured in a changing climate, including by improving water productivity in agriculture, use of precision irrigation, and solar water pumps.

There is a need for climate smart solutions to address a range of water issues across the river basins—from water-related disaster risk reduction in the hills and high mountains, to seasonal water stress in the foothills, and increasing saltwater intrusion and salinity in the delta regions of the rivers flowing from

the HKH. Many new towns and cities are developing rapidly in the hills and mountains, but their water future remains uncertain. The revitalisation of springs can present a sustainable future for HKH towns and cities. Along with water provisioning, there is a need for appropriate efficient water use technologies, wastewater treatment, solid waste management, green building and other climate-smart development solutions in these rapidly growing urban centres.

There is also a business case for high value mountain products. The HKH has an abundance of diverse high-value products with niche advantages. Specialty crops and value-added products—fruits, nuts, legumes, spices, condiments, tea, coffee, medicinal and aromatic plants—present business opportunities and options for enhancing the livelihood of mountain communities.

Governments are keen on investing in climate resilience. For instance, after pilot interventions by ICIMOD and its partners, the Government of Nepal has out-scaled the Climate Resilient Village (CRV) concept to 41 municipalities across the country.

In addition to climate change adaptation, disaster risk reduction and resilience building opportunities, there are significant opportunities for creation of effective climate risk insurance markets and insurance-related schemes for people and assets at risk in the HKH.

If we can work together to direct more green investments in the HKH, we can together protect this vital resource. Home to vast life, culture, beauty and biodiversity, the HKH is a microcosm of the world around us. It is the place where, quite literally, the earth comes together, and its reach spans across everything. Regions. Countries. Landscapes. Languages. Being at the top of the world, changes happen here before they happen anywhere else and the beat of this place vibrates across the globe. It is the pulse of the planet. And we need to work together to protect the pulse.



**Elena Zheglova**

UNITAR

[elena.zheglova@unitar.org](mailto:elena.zheglova@unitar.org)

**Christine Majowski**

Project Manager

Giz

[christine.majowski@giz.de](mailto:christine.majowski@giz.de)

**Kristoffer Nielsen**

Climate & Sustainable Finance

[kristoffer.nielsen@seb.se](mailto:kristoffer.nielsen@seb.se)

**Mats Olausson**

Senior Advisor, Climate & Sustainable Finance

[mats.olausson@seb.se](mailto:mats.olausson@seb.se)

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**and create an account by clicking on “Login to enroll”. The course takes approximately two hours.**

# Introduction to Sustainable Finance

## An E-learning course developed by SEB, GIZ (develoPPP.de), PAGE and UNITAR

It is with great pleasure that the Strategic Alliance on Green Bond Market Development in G20 Emerging Economies (STA), a develoPPP.de partnership between Skandinaviska Enskilda Banken (SEB) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH - funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) - , in cooperation with the Partnership for Action on Green Economy (PAGE) present the e-learning course Introduction to Sustainable Finance. The course is hosted at UN CC:e-Learn, the One UN Climate Change Learning Partnership.

The course is designed in an interactive and practice-oriented manner and covers the fundamentals of Sustainable Finance while providing several opportunities to dive deeper. It is suitable for introductory level learners but can be also be used by professionals with pre-knowledge and experience in sustainable finance. The e-learning programme makes the case for why and how to choose sustainable finance solutions over conventional investment. After completing the course, participants will be able to:

- Understand the relevance of the financial system in the debate of climate change and sustainable development;
- Describe and discuss current policy and market level developments and trends in sustainable finance;
- Understand the ecosystem of financial market actors and how they benefit from integrating sustainability considerations into business practices;
- Distinguish between different sustainable finance products and markets, including different types of sustainable bonds and loans;
- Distinguish the different types of sustainable investment strategies;
- Discuss the concept of environmental, climate-related, social and governance risks and their importance to financial professionals

The course is suitable for government officials involved in developing and implementing policy frameworks; staff from public and/or private sector institutions; other professionals and individuals/institutions with an interest in sustainable finance.

The course shares valuable insights of the Strategic Alliance of GIZ and SEB, and our technical partner CICERO, gained in the last three years through multistakeholder cooperation in emerging economies and interactions with market leaders worldwide. In addition, the course builds on SEB's collaborations with Sustainable Finance leaders around the world, including many forward-looking institutional investors. Participants also learn about examples of UN-supported initiatives to promote sustainable finance in countries like Mongolia and Indonesia.

We hope the course creates value for its participants and contributes to the building of awareness, knowledge and dialogue.



This report was published on 29 August 2019. Cut-off date for calculations was 28 August 2019, unless otherwise stated.

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**Christopher Flensburg**

Head of Climate & Sustainable Finance

Phone: +46850623138

[christopher.flensburg@seb.se](mailto:christopher.flensburg@seb.se)

Assistant: [johanna.cavallin@seb.se](mailto:johanna.cavallin@seb.se)

**Gunilla Svensson**

LC&FI Marketing & Communications

[gunilla.Svensson@seb.se](mailto:gunilla.Svensson@seb.se)

**Ben Powell**

Deputy Head of Climate & Sustainable Finance

[benjamin.powell@seb.no](mailto:benjamin.powell@seb.no)

**Mats Olausson**

Senior Advisor, Climate & Sustainable Finance

[mats.olausson@seb.se](mailto:mats.olausson@seb.se)

**Gabriella Eriksson**

Advisor and Specialist Green Library,

Climate & Sustainable Finance

[gabriella.eriksson@seb.se](mailto:gabriella.eriksson@seb.se)

**Kristoffer Nielsen**

Climate & Sustainable Finance

[kristoffer.nielsen@seb.se](mailto:kristoffer.nielsen@seb.se)

**Carol Au-Yeung**

Climate & Sustainable Finance Asia

[carol.au.yeung@seb.se](mailto:carol.au.yeung@seb.se)

**Urban Josefsson**

Head of International, Financial Institutions Coverage

[urban.josefsson@seb.se](mailto:urban.josefsson@seb.se)

**Thomas Thygesen**

Editor

Head of Strategy, Head of

Research, Climate & Sustainable Finance

[thomas.thygesen@seb.dk](mailto:thomas.thygesen@seb.dk)

**Elizabeth Mathiesen**

Senior Strategist,

SEB Markets Research

[elizabeth.mathiesen@seb.dk](mailto:elizabeth.mathiesen@seb.dk)

**Tine Vist Salo**

Quantitative Strategist,

SEB Markets Research

[tine.vist.salo@seb.dk](mailto:tine.vist.salo@seb.dk)

**Steven Brooker**

Financial Strategy

[steven.brooker@seb.dk](mailto:steven.brooker@seb.dk)

**Sofia Duvander**

SEB Solutions

[sofia.duvander@seb.se](mailto:sofia.duvander@seb.se)

**Charlotte Asgermyr**

Chief Covered Bond and FI Market Strategist,

Macro & FICC Research

[charlotte.asgermyr@seb.se](mailto:charlotte.asgermyr@seb.se)

**Anna Svensson, CFA**

Head of International Credit Sales

[anna.x.svensson@seb.se](mailto:anna.x.svensson@seb.se)

**Lars Dybwad**

Head, Macro Sales, Norway

[lars.dybwad@seb.no](mailto:lars.dybwad@seb.no)

**Miikka Riihimäki**

Head, Macro Sales, Singapore

[miikka.riihimaki@seb.fi](mailto:miikka.riihimaki@seb.fi)

**Martin Bergqvist**

Head, Markets, Hong Kong

[martin.Bergqvist@seb.se](mailto:martin.Bergqvist@seb.se)

**Sascha Köhler**

Head of Institutional Sales DACH

[sascha.koehler@seb.de](mailto:sascha.koehler@seb.de)

**Sir Roger Gifford**

Senior Banker, Large Corporates & Financial Institutions, London

[roger.gifford@seb.co.uk](mailto:roger.gifford@seb.co.uk)

**Bo Madsen**

FI Sales, Denmark

[bo.madsen@seb.dk](mailto:bo.madsen@seb.dk)

**Jonas Englund**

Cross Asset New York

[jonas.englund@sebnyc.com](mailto:jonas.englund@sebnyc.com)

**Paul Bergel**

Macro & Credit Sales New York

[paul.bergel@sebnyc.com](mailto:paul.bergel@sebnyc.com)

**Anders Wickman**

London UK Sales, Fixed Income

[anders.wickman@seb.co.uk](mailto:anders.wickman@seb.co.uk)

**Vincent Vennberg**

FI Sales

[vincent.vennberg@seb.se](mailto:vincent.vennberg@seb.se)

**Frank Teuber**

DCM

[frank.teuber@seb.de](mailto:frank.teuber@seb.de)

**Marcus Jansson**

DCM

[marcus.jansson@seb.se](mailto:marcus.jansson@seb.se)

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