

# The Swedish Approach and Climate Policy Lecture: Sustainable Development and Environmental Preservation

22 October 2021

Lecture by Ambassador Annika Thunborg

Good afternoon everyone, it is a great pleasure for me to be here with you, junior colleagues in the diplomatic service of the Department of Foreign Affairs. Many thanks to the Foreign Service Institute for the invitation, very timely since the world's nations will soon meet again to hopefully agree on even stronger commitments to combat climate change at the next UN Climate Change Conference, COP26 in Glasgow. I will speak for about half an hour to give ample time for questions and answers and discussion, this part is always the best part of any lecture, I believe.

As you are well aware, climate change is one of the biggest challenges of our time. The UN Intergovernmental Panel on Climate Change or IGPCC stated in its newest report that the concentration of carbon dioxide in the earth's atmosphere is greater now than at any time in the past two million years. It can be directly attributed to human activities such as the burning of coal, oil and other fossil fuels as the world as a whole becomes industrialized. We use more cars than ever at the same time as the human race takes up increasingly more space on earth with growing populations and longer life spans. Humans have caused so much emissions that the adverse effects will continue for at least another 30 years and intensify if the world does not act now.

- The UN report also found that climate changes are now happening much faster than before. For example
- o the rate of increase of sea levels has doubled since 2006
- o severe heat waves have become hotter since 1950
- o extreme heat in the oceans that can kill marine life has doubled in frequency in the past four decades.
- o and heavy rain and tropical cyclones cause increased flooding
- The devastating impacts of climate change are now seen and felt all over the world, including both in Sweden with a winter climate and in Philippines with a tropical climate with severe negative effects on flora and fauna, on biodiversity.
- There is only one thing we can do to keep this development at bay and start to reverse it and this is to cut emissions of fossil fuel completely to reach zero net emissions.

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- Aside from climate change, we are currently facing another crisis: the COVID-19 pandemic and as we know, this pandemic has also been triggered by disrespect for the environment, we do know that the human intrusion in habitats of other living beings for example through deforestation and the expansion of live stock at the expense of wild life come with the negative effects of unleashing unwanted viruses. The COVID-19 pandemic has hit the world severely, causing pain and suffering to many and most severely to the poor and disadvantaged. As governments take action to overcome the pandemic, this is a critical moment to "build back better and greener" for redesigning our societies to become more sustainable, resilient, and inclusive.
- From a Swedish perspective, we are happy to see how quickly the concepts of a green recovery and 'building back better and greener' have gained traction over past months.
- We have ourselves been undertaking this journey over the last 50 years, since the 1970s, with the aim to reverse the negative impact of past industrial and agricultural processes that are today long gone but that were still a reality when I was a kid in Sweden in the 1970s.
- I remember Stockholm, the capital of Sweden, with choc a bloc traffic, industrial plants located inside the city limits and in the harbors causing unbearable fumes and air- and water pollution as well as agricultural processes using toxins contaminating soil and water.
- So, what did we do to change this situation?
- First, let me say that the social and environmental popular movements, the activists, of the 1960s were crucial for demanding change. The oil crisis of the 1970s also showed that it from an economic point of view was not beneficial to continue to be so dependent on oil as we were at the time. We had to change both for environmental and economic reasons.
- Actions taken over the last 50 years have been a combination of firstly, public policy measures, legislation and reforms and economic incentive instruments, the implementation of these reforms and the accountability that comes with it. Sweden has both influenced the international and regional conventions and legislation adopted in multilateral fora and in the European Union and we have also been led by and compliant with these frameworks.
- Secondly, private initiatives and the close cooperation between the business sector and academia have been crucial to find innovative, and environmentally sound technological inventions and solutions to our challenges. As you may know Sweden has for many decades ranked as one of the most innovative countries in the world, we also invest more than any other EU country in research

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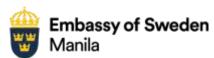
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and development, 3.6% of our GNP. The multinational companies have a tradition to work with small and medium size companies and with close connections to research institutions including in our Science parks where private companies and university institutions interact. We usually say that the economic, democratic and today also environmental success of Sweden which at the turn of the last century 120 years ago was one of the poorest countries in Europe, is very much due to the quadruple helix model, i e the close cooperation between the public sector, the business sector, academia and civil society representing every segment of society and of the people, the youth environmental activist Greta Thunberg being an example of the latter.

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- Sweden has shown that it is possible to reduce emissions while maintaining economic growth. In the last 40 years, since 1990, Sweden's GDP increased by 71% while emissions fell by 26%.
- Today, the 2021 Climate Change Performance Index ranked Sweden as the global leader in implementing the Paris Agreement.
- Sweden is leading the climate financing talks in the COP-process where the goal is to mobilize USD 100 billion per year from 2020 to 2025. As of today around USD 79 billion have been pledged to show that the world will achieve the Paris Agreement's goal of keeping temperature increases below 1.5 degrees Celsius.
- Sweden is the world's largest donor per capita to several multilateral climate funds, including the Green Climate Fund (GCF), the Global Environmental Facility (GEF), and the Adaptation Fund (AF). Sweden also spearheads efforts to phase out global financing of fossil fuels, including in the international financial institutions such as the Asian Development Bank.
- In commemoration of the 1972 Conference and of the creation of UNEP, Sweden will host 'Stockholm+50: a healthy planet for the prosperity of all our responsibility, our opportunity' in June next year, in 2022, to which governments, businesses and youth is invited, and which will focus on concrete implementation of the Paris agreement.
- By 2045, Sweden aims to be the first OECD country to achieve carbon neutrality. Sweden is to have zero net emissions of greenhouse gases into the atmosphere. This means that greenhouse gas emissions from activities in Sweden should be at least 85 percent lower than in 1990. The remaining 15 percent can be achieved through supplementary measures such as increased carbon sequestration in forest and land, carbon capture and storage technologies (CCS) and emission reduction efforts outside of Sweden.
- After 2045, Sweden should achieve negative emissions, meaning that the amount of greenhouse gas emitted is less than what can be reduced through the natural eco-cycle or through supplementary measures.

As mentioned earlier, the quadruple helix approach has been key to developing Sweden and today we also see many initiatives taken with this approach to fight climate change.

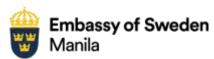
## Slide 1

• First, let me mention FOSSIL FREE SWEDEN which is an initiative by the government to work with the business sector in the transformation to a low-carbon, fossil free society. Until today, 450 Swedish actors in 22 different industrial sectors have confirmed their commitment including Swedish companies that also are active in the Philippine market such as the mobility companies Volvo Cars, Volvo Buses, and Scania, retailers such as IKEA, and industrial

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manufacturing companies such as SKF. Thus, their efforts to strengthen their competitiveness by going fossil free will also benefit the Philippines.

So far, the 22 different industrial sectors have produced their own roadmaps for achieving fossil free business sectors.

Let me give you one example, from the shipping industry:

- o Sweden's shipping industry has set the goal of becoming climate neutral in 2024-25, I e in just three years through the following steps: the reduction of energy tax on shoreside electricity by the government to contribute to the deployment of charging facilities in Swedish ports.
- o Sweden's state-owned ferry companies are converting to battery operation and electrically driven cable ferries. Here research is essential so the government has increased funding for innovation in this field.
- o The development of new vessels with modern sails, automated to make wind propulsion efficient, will reduce emissions by 90%. They are aimed to be launched in 2024 which shows they've come far in the design and development of these ships.

Slide 2

Let me show you a video to show what Fossil Free Sweden plans 10 minutes. The journey to a fossil free Sweden\_v3 (vimeo.com)

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Slide 3

There is also an initiative to bring Fossil free Sweden to an international level. It is called the

Leadership Group for Industry Transition (LeadIT) and was developed by 13 countries, many European countries, the Nordics, the UK, France and Germany but also the United States and South Korea and Ethiopia, as well as the two countries that launched the initiative in 2019: Sweden and India with their Primer Ministers Stefan Löfven and Narendra Modi. The objective is to lead the low-carbon transition of energy-intensive industries since heavy industry and the transport sector account for around 30 per cent of global (sounds little). The goal is to achieve fossil-free heavy industry with net-zero emissions by 2050.

LeadIT has been developed in cooperation with the World Economic Forum, its Secretariat is the Stockholm Environment Institute (SEI), and together with more

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than 17 mulitnational companies it has developed roadmaps for 30 industrial sectors.

I will soon talk more about the specific measures mentioned in the video, but first let me tell you a personal story.

I mentioned earlier how life was in Stockholm when I was a kid with a lot of traffic, fumes and contamination in the City. Let me now talk about how it is today.

#### Slide 4

I have lived in many countries of the world but as a diplomat I do go back to live in Stockholm between postings. And when we live there my husband and I we never own a car since it is more comfortable and efficient to use public transportation in our daily lives. If the car was King when I was a child, today in the metropolitan region of Stockholm which has around 2 million people in the metropolitan area, the car has been largely replaced by an integrated seamless network of public transportation consisting of commuter trains, subway, tramways, electric and biogas buses and bike lanes and it is very easy and economical to use it with the same ticket or monthly card. Ferry boats are also part of the network since Stockholm is built on 14 islands in between a lake and the sea and has a lot of coast. Almost all my colleagues in the Foreign service use this public transportation system to go to the office, since they can travel without stress instead of driving, with complete wifi coverage they can work on their computers, make phone calls, eat breakfast, and read books or newspapers in peace. When my husband and I need a car, usually to go on a longer trip outside the city, we would rent one from one of the car pools that provide a car through an app digitally, a car that can be picked up and left at the corner of our street.

It is not only the traffic situation and behaviour that has changed in the last 40 years but the way of living. The apartment that my husband and I own is located in a smart urban area in what formerly was an industrial port area, today transformed into an area with residential housing, stores, restaurants, small businesses, schools, kindergarten, urban gardens, and sustainable public transportation. Today we can swim in the water outside our windows, water that was previously contaminated, these new boroughs are also characterized by their integrated waste and water management systems, the use of renewable energy for heating and transport, often with the use of waste turned energy. These new boroughs have their own integrated circular economy-systems, today moving into the direction of zero waste rather than recycling. I must say that every summer when I visit my home town it feels a bit like science fiction but moving here, I was glad to see that the Smart City concept has started to take hold in places such as Bonifacio Global City although these areas so far are not for everyone but only for the well to do.

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Moving away from my personal story, let me now focus more on some of the specifics in the Smart City concept that I mentioned and that will lead to a fossil free Sweden and hopefully also a fossil free Philippines:

Slide 5

#### First, BIOGAS

We started to use organic waste and wastewater as fuel for buses in 2001, 20 years ago. These materials can be turned into biogas in just three weeks and what is left of the waste when the biogas is extracted is a good quality fertilizer in agricultural production. In the major cities, all buses and most taxis and the heating in most residential housing (we need heating as much as you need AC) run on this form of biofuel.

Slide 6

# Second. ELECTRIC vehicles

They are defined as running solely on electricity and with a battery for energy storage, and we started to introduce and use them in 2015 as zero-emission vehicles, and compared to the vehicles that run on biofuel, they improve air quality and reduce the noise even further.

Today many cities from the south to the north are rolling out emission-free and silent electric buses.

Slide 7

### Third. RENEWABLE ENERGY

Sweden has a lot of hydro power from its many rivers in the North. We have used it for over a hundred years and it also plays an important role in regulating other renewable energy sources to even out effect peaks.

Today, more than half of our energy comes from renewable sources, most of it hydropower but also wind, solar and geothermal power is increasing. Hydro constitutes close to 40% of the total energy consumption and wind power more than 10%. To complete the picture, let me say that the remaining part of our energy consumption or more than a third comes from nuclear power built up in the 1970s and 80s to diminish the dependency on oil, whereas the fossil fuels today have been diminished to constitute around 10 % of the total energy consumption. In 2019 the world's first off-grid solar-powered hydrogen producing and filling station based in Sweden opened to the public. The station is powered by 100 per cent solar energy from a nearby solar cell park.

The solar energy is used to produce hydrogen gas, an emission-free gas that can be used as a backup power solution for the electricity grid, providing solar-powered

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energy at all hours of the day. The hydrogen gas can also act as fuel in cars, trucks, trains and – in the future – airplanes.

In this way, hydrogen may provide a competitive fossil-free source of fuel for transportation without the need for the expensive lithium batteries that electrical vehicles depend on today.

The use of solar energy in this way shows that also country like Sweden with less than 2000 sun hours per year in the Stockholm area can rely on solar power. (To compare with Manila that has roughly 200 sun hours more per year than Stockholm.)

## Slide 8

## Fourth. WASTE MANAGEMENT

Recycling is the foundation of the Swedish waste management system. It works well thanks to engaged citizens, producers' responsibility for packaging, and government incentives like landfill taxes and ambitious national targets.

Swedes recycle about 84 per cent of our used plastic drink bottles and aluminium cans. Everyone who buys a plastic bottle or can has to pay a minor deposit, a deposit the consumers get back when they recycle the empty bottles and cans.

Despite the seemingly high level of recycling, there's still room for improvement. The target for drink bottles and cans is 90 per cent recycling.

The Swedish deposit return system is managed by a company owned by the country's retailers and drink producers (Returpack). Consumers take their bottles and cans to a pantautomat, a sort of reverse vending machines, in their local supermarket. There is often the choice of getting the deposit back or donating it to charity. The recycled bottles and cans are then transported to a hub, where they are recycled and turned into new bottles and cans every year.

This sustainable recycling solution is one of Europe's oldest schemes. All drink bottles and cans ready for consumption must, by law, be included in an approved recycling system before being marketed in Sweden.

#### Slide 9

## Fifth. WASTE TO ENERGY

Sweden recovers all its non-recyclable waste by incineration, turning waste into electricity and district heating. We have 44 facilities in Sweden, and some of them are located close to the city centre, this is fine wince they all use filter technology that reduce toxins and dioxin emissions to close to zero.

Instead of heating each building individually with electricity or oil, this climate-smart waste-to-energy solution uses local resources such as burnt rubbish or captured excess heat from industrial production or data centers to heat up water and distribute it to all buildings connected to the district heating system, a system which

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was introduced already in the late 1940s and is the most common source of heating in Sweden. By doing so, 93 per cent of all energy in the system which consists of a network of underground pipes and cables providing heating, is either recycled or comes from renewable resources.

Let me finally mention a couple of other areas where innovative solutions are being used

Slide 10

## WATER REUSE

We have a world leading research and innovation centre in Stockholm (Sjöstadsverket), where wastewater is purified in several different steps, making it possible to reuse it as drinking water. The sludge is used to produce biogas and nutrients are taken back to farming as fertilizer.

Slide 11

#### ROADS AS CHARGERS

In 2016, the world's first electric road section on a public road was inaugurated on a motorway in Sweden. This electric road uses an overhead line and the trucks are equipped with pantographs, like a tram.

We have now also opened the world's first wireless electric road, where electric trucks and buses can charge while driving through electric power being transmitted to the electric vehicle through induction, a technology that uses electromagnetic fields – like how an electric toothbrush charger works.

We have a plan for how 2,000 kilometers of the country's busiest roads can be electrified by 2030 and close to the main international and national airport in Stockholm (Arlanda Airport), an electric rail in the roadway has charged freight vehicles since 2017.

Slide 12

## **SMART GRIDS**

Smart Grids that can be used to optimize energy flows, often related to reducing costs at peaks of usage. Local, individual producers can sell electricity back to the grid. Electric cars can be used as storage units for the grid.

Slide 13

# **SOIL REMEDIATION**

Building new city districts often involves taking care of soil pollution from previous activities in the area.

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As you know very well, fighting C02 emissions isn't a one country show. Since we share the air we breathe, lets share knowledge, ideas, and resources.

So what can we do together, Sweden and the Philippines?

We are both strongly committed to the Paris agreement and to Agenda 2030 and the SDG's. We are both strong partners of the UN and its multilateral system and institutions. We will both have big and diverse delegations at COP26. We both have made national commitments on how to go low carbon. We both have started to build smart cities and urban areas and Sweden has many companies here in the country that are interested in assisting the Philippines in developing this concept further including smart mobility, starting with the EDSA Busway.

#### Slide 14

Let me also mention hybrid and electric vehicles developed by Volvo Cars that has been in the Philippines for 27 years and that is today the first car manufacturer in the country to bring in Plug-in Hybrid vehicles with its low to zero CO2 emissions. Volvo Cars overall climate action plan is one of the most ambitious in the car industry, is to be a fully electric car brand by 2030, in less than 10 years, with only pure electric cars in its line-up.

By 2040, Volvo Cars' ambition is to be a climate-neutral company. (Volvo as a luxury vs middle-class car)

# Slide 15

## Two. Fossil-free Shipping

The International Maritime Organisation (IMO) has introduced new measures that will require ships to reduce their greenhouse gas emissions through indexing, measuring and energy efficiency schemes.

Sweden work here with the European Union and its partners there.

I am glad to note that last September 2021, The Philippine Maritime Industry Authority MARINA concluded the Marine Environment Protection Forum in the Philippines and agreed to identify the common environmental challenges facing the domestic shipping sector. MARINA also shared its actions and insights on issues such as climate change, coastal pollution, destruction of marine habitats, marine debris and pollutants, and maritime transport emission. Based on this initiative, the pool of experts and specialists from relevant government agencies and the private sector would establish a unified goal and set of measures to attain the Sustainable Development Goals (SDGs), particularly SDG 13 – Climate Action and SDG 14 – Life Below Water.

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## Slide 16

- 3. Related to the marine environment is Coastal cleanup and plogging We know that some of the ill effects of the climate crisis like flooding and flash floods are exacerbated by littering and improper trash disposal that clog sewage and drainage systems and bodies of water. The coastal cleanup and plogging activities of the Sea Mariners Program is a great way to engage youth communities in environmental protection.
- For those of you who don't know, Plogging is a combination of jogging with picking up litter (merging the Swedish verbs plocka upp (pick up) and jogga (jog]. It started as an organized activity in Sweden around 2016 and spread to other countries in 2018, following increased concern about plastic pollution. As a workout, it provides variation in body movements by adding bending, squatting and stretching to the main action of running, hiking, or walking. An estimated 2,000,000 people Plog daily in 100 countries and some plogging events have attracted over 3,000,000 participants.

The Sea Mariners Program is also a very good example of how the Swedish quadruple helix model can work in the Philippines since it is focused on partnership between

- Government represented by The Embassy of Sweden in Manila, the Swedish Institute and for the Philippines, Malabon and other cities in Metro Manila
- Business represented by The Philippine Transmarine Carriers (PTC) and Swedish companies Epiroc, Volvo Buses and Tetra Pak
- Academia represented by The Far Eastern University (FEU)
- Civil society represented by The Sweden Alumni Network Philippines (SANPH) and the Asia Society for Social Improvement and Sustainable Transformation (ASSIST Asia) (ASSIST was established in 2003 with the aim of addressing sustainability challenges in the Philippines. Today, it has evolved into a self-sustaining, Pan-Asian, non-profit organization driven by passion and purpose for progress and prosperity in the region.)

I do hope that we will soon be able to continue carry out these activities once quarantine restrictions have been eased and more people have been vaccinated.

## Slide 17

Let me finish by talking about a different sector that also is a big polluter and carbon emitter and although we don't always think about it, it weighs heavy on natural resources.

I am talking about the Fashion industry.

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Swedish fashion giant H&M that currently has over 40 stores in the Philippines and is expanding has set a clear goal to only use recycled or other sustainably sourced materials by 2030.

The background is that far too many textiles end up in trash bins and landfills, regularly thrown away with household waste. Upcycling, reusing, and eventually recycling, rather than using up even more virgin resources are some of the ways to a more sustainable fashion future.

Thus, H&M launched their garment collecting initiative many years ago wherein consumers can drop off old clothes and discarded textiles at H&M stores worldwide including in the Philippines. In exchange, Filipino consumers get a 15% discount voucher which they can use for new purchases.

H&M is also part of the new Philippine initiative to encourage customers to bring their own reusable bags. The project is called Let's Reuse where customers will be charged PHP 2.00 for every paper bag of any size when they shop in any H&M store in the Philippines starting September 2020. All proceeds goes to Waves For Water Philippines to support their clean water projects in many local communities in the country.

#### Slide 18

The Embassy of Sweden also collaborated with H&M to launch the sustainable fashion exhibit entitled Fashion Revolution: The Future of Textiles which was launched last 2019 at the Metropolitan Museum in Manila and later was successfully exhibited at various other locations in Metro Manila and in the province of Cebu including at the Cebu Design Week and the University of San Carlos (USC) Cebu. The exhibit highlights the fashion industry's major environmental challenges, the need for a more sustainable fashion and textile industry and Sweden's active role in promoting and showcasing Swedish solutions, and guides consumers to contribute effectively to a more sustainable world.

# Slide 19

The retail giant IKEA is also scheduled to open its largest department store in the world here in Manila, and as you probably know, IKEA is identified with sustainable retail industry, only using materials from sustainable and certified forests as well as being a world leader on providing social and economic sustainability, i e good labor conditions and a good work environment and anti-corruption operations.

Slide 20

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So these are a couple of examples where I believe Sweden and the Philippines can work together.

I am now looking forward to your questions and to our discussion. Thank you.

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