International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 8.141
Peer Reviewed Bi-Monthly
Vol. 6 No. 19 March - April - 2025

India Denmark Bilateral Relations: A sustainable Future

Advita Dilip Chaobal & Priyanka Pandey
Student,
Karmaveer Bhaurao Patil College, Vashi
Corresponding Author – Advita Dilip Chaobal
DOI - 10.5281/zenodo.15108567

Abstract:

India Denmark Green Strategic Partnership is a mutually beneficial agreement which promotes comprehensive aspects of political cooperation, economic relations, green growth, employment opportunities and most importantly addressing the biggest challenge of climate change. This bilateral cooperation has a vision which is laid down in its jointly agreed framework, a framework which will be aimed toward a sustainable solution for the decades long problem of climate change and its adverse impacts. It not only focuses on these aspects but also laid proposals for cumulative efforts for water loss and its efficiency. The two countries also partnered up during the COVID-19 pandemic and laid proposals on it, the agreement talks about green transition and a significant understanding agreed upon by both the leaders that is the path toward sustainability. This thorough aim is carried on and is a responsibility of the relevant ministries, institutions, stakeholders. This partnership aims to strengthen in the fields of science, technology, innovation, and digitisation, supporting international cooperation like the World Trade Organisation's trading system with sustainability as its focal point. The research aims to study objectives such as the possible solutions undertaken, to study the development of the core aspects of the agreement of the two countries. The research aims to analyse and address possible challenges of the agreement.

Keywords: Green strategic partnership, climate change, sustainability, core aspects

Introduction:

India today stands as one of the fastest growing economies in the world with a global hub for energy, innovation, manufacturing, information communication technology, start-ups, and many more. India has undertaken various initiatives like National Green Hydrogen Project, Smart Cities, projects for renewable energies, in order to align with Sustainable Development Goals as well as the Paris climate agreement. Taking into consideration the global issue of climate change which has affected almost every nation, countries realised the severe issue and came together to work toward a sustainable future through sustainable way, and part of it can be seen through initiatives of United Nations Sustainable Development Goals, Goal no. 13 that talks about combating climate change by adapting various targets that are to be achieved by 2030. The 2nd India Nordic Summit with participating Nordic countries Sweden, Iceland, Finland, Denmark, came together to strengthen the cooperation in order to focus on issues of international peace, security, multilateral cooperation, green transition, climate change, blue economy, digitisation and innovation. During the summit India Denmark Green Strategic Partnership Agreement was also formulated and signed by both the countries. According to the agreement Denmark with its finest technologies would assist the Indian economy to help combat climate change initiatives to open a path for a more sustainable way. To have a collaborative relationships

with Nordic countries is in itself a transitional process as these countries, if we only limit to Danish companies these are been there in the market for a long period in sectors that are necessary for green growth, these companies have sustainable solutions, innovation, and technology and investments as there are over 140 Danish countries with their share in the Indian market. By this partnership both the countries aim to put forward solutions and evidence of a successful implementation of the bilateral cooperation toward a safe future. The agreement is of great significance to India as it will help us to achieve our net zero emissions goal by 2070. India and Denmark relations date back to its establishment in 1949, since then we have maintained strong bilateral ties and in recent years when both countries signed this agreement. Denmark ranked first in Environmental Performance Index in 2022, it provides green and cleaner energy for everyday lives, the success of this goes back to when Denmark was dependent on OECD countries for energy supply, which led to opt for self reliant methods in the energy sector and the current transition can be seen in its success of the measures adopted by the country like societal collaboration, public private investment, political consensus and its partnerships with other countries for the green future. If we talk about India in brief, we stand at number four globally in renewable energy capacity with 35.6% growth rate in solar power in the last decade. India aims to get its 50% energy from renewable sources by 2030, hence attracting investments in order to generate energy from renewables consisting solar and wind energy, green hydrogen. India is all up for building its energy grid system and innovations in battery storage with an aim to achieve 47 gigawatts of calacity by 2031. India's current energy capacity has crossed 200 gigawatts which aligns with its aim of achieving 500 gigawatts by 2030 form non fossil energy sources. The installations of renewable energy capacity reached 203.18 gigawatts in 2024, non fossil energy at 211.36 gigawatts in 2024. The nuclear energy share stands at 8,810 MW, electricity energy capacity reached 452.69 GW through a significant part generated from renewable energy, solar power with 92.12 GW, wind power with 47.72 GW, hydroelectric power from hydro projects share at 46.93 GW and other small projects sourced energy from our rivers and water bodies with their share o f 5.07 GW. The biopower including biomass and biogas sharers 11.32 GW. These milestones not only paves way for a sustainable future but it created massive employment opportunities, especially if we focus on the hydropower sector which provided around 45 lakh job opportunities in global total standing only second to China. According to the International Renewable Energy Agency review of 2024 India's produced 16.2 million workforce which was up from 2022 workforce of 13.7 million. We also have the top runners of states that have shown significant in the progress toward renewable energy goals wherein Rajasthan emerged at top with 29.98 GW of energy capacity, followed by Gujarat with energy capacity of 29.52 GW, Tamil Nadu at number 3 with 23.70 GW, and Karnataka stood 4th with energy capacity of 22.37 GW. All these attempts prove that India , although has a long way to go, however has achieved these milestones in a decade which itself is a big milestone, this makes our path toward emerging as a global leader in the energy sector today.

India and Denmark share a robust bilateral relationship grounded in mutual interests, encompassing trade, investment, and sustainable development. Both nations have actively collaborated on initiatives aimed at promoting green technologies and renewable energy, recognizing the urgent need for sustainable business models in the face of climate change. This partnership is further strengthened by India's commitment to its ambitious climate goals and Denmark's expertise in wind energy and sustainable urban solutions, fostering innovation and investment opportunities that not only enhance economic growth but also contribute to a greener future (Rathod et al., 2024).

India and Denmark have cultivated a robust bilateral relationship that emphasizes sustainable trade and development, reflecting both countries' commitment to addressing global environmental challenges. This partnership is characterized by collaborative efforts in green technologies, renewable energy, and sustainable urban development, which are aligned with India's goal to enhance its clean energy capacity and Denmark's expertise in wind energy and sustainable practices. Furthermore, the growing trade between India and Denmark reinforces the importance of ethical business practices and sustainability, facilitating the exchange of innovative solutions and fostering economic growth while prioritizing environmental stewardship. Through initiatives like the India-Denmark Green Strategic Partnership, both nations are not only enhancing their economic ties but also setting a standard for sustainable trade practices that other countries can emulate (Dagde & Jadhav, 2024).

India and Denmark have been strengthening their bilateral relations through strategic partnerships, particularly focusing on sustainable development, renewable energy, and digital innovation. Recent trade patterns indicate a growing exchange between the two nations, with Denmark exporting machinery, pharmaceuticals, and maritime technology to India, while India exports textiles, IT services, and agricultural products to Denmark. The two countries have also emphasized collaboration in addressing climate change, with Denmark pledging to support India's ambitious renewable energy goals, reflecting a commitment to not only economic ties but also shared global challenges (Harale et al., 2024).

Viksit Bharat, or "Developed India," is an ambitious initiative aimed at transforming India into a developed nation by 2047, focusing on sustainable economic growth, social inclusion, and technological advancement. In this context, India-Denmark bilateral relations have gained significant momentum, underscored by a shared commitment to sustainability, innovation, and democratic values. The two nations have strengthened their partnership through collaborative efforts in areas such as renewable energy, climate action, and green technologies, exemplifying their dedication to achieving economic development while addressing pressing global challenges (Harale & Pawar, 2024).

Henceforth, it is important for us to collaborate with nations in order to achieve our and global goals of sustainable growth. Further the research paper aims to provide insights into the agreement of India Denmark and potential challenges that may portray a difficulty on our road to sustainability.

Objectives:

- To study the possible solutions undertaken
- To study the development of the core aspects of the agreement

Discussions:

If we look at Denmark's policy measures to combat climate change and its ambition to emerge as the most climate friendly country in the world, it has undertaken serious targets with suggestions from international experts and forums in order to align with its sustainable goals. Denmark has decided to end oil and gas exploration in the North Sea by 2050 and become the first carbon neutral. It also has launched 14 Climate partnerships along with the private sector to contribute to CO2 reduction. It also has set a goal to achieve 60% of its energy to be generated by wind power by 2030, for making this reality it has made investments in wind farms, construction of energy islands for generation of green energy, sourcing its 49% of electricity energy from wind power in 2019. In 2022, the government of Denmark set the goal of installing 4-6 GW of electrolysis capacity by 2030 for green hydrogen production. Considering Denmark's

geographical position which makes it vulnerable in case of increase of water levels as it is largely surrounded by water and have islands, the government presented a plan of national climate adaptation, in which it helps municipalities and landowners to take efforts at local level, building infrastructure for cities, coasts, in order to tackle increased sea levels. The government also decided to increase fund for its coastal areas in 2024. All such efforts over the years have made Denmark a top scorer in the climate change adaptation and measures. Hence, to partner up with such countries that have expertise is of high importance to India.

If we assess India's initiatives for green growth, we have many that have been undertaken. We have initiatives such as "LIFE" which refer to the sustainable lifestyles under which reducing intensity of emissions by 45% from 2005 levels. Carbon sink of 2.5 to 3 billion tons of CO2 equivalent through forest cover. Reserve Bank of India issued a framework for banks to accept green deposits, aid customers in their sustainability goals, and provide flow of credit to green projects. For green infrastructure the government raised 16,000 crore from sovereign green bonds. Active investments in clean energy sectors like solar, wind, green hydrogen, electric vehicles. Government launched National Green Mission which aims to produce 5 million metric tonne green hydrogen per year, National Policy for wind-solar for promotion of grid connected wind solar hybrid system, PM Surya Mufti Bijli Yojana with Rs 6,250cr which will invested in installation of solar rooftops in households. Bio E3 for biotechnology for economy p, environment and employment was approved in 2024. GOBHARdhan scheme under which a new 500 waste to wealth plants from which 200 compressed biogas plants and 300 cluster based plants will be as a part of scheme. PM PRANAM which stands for "Prime Minister's Programme for Restoration, Awareness, Nourishment, and Amelioration of Mother Earth", under which the central government encourages the states and union territories to promote the balanced use of chemical fertilisers and their alternatives. "Amrit Dharohar" program under which promotes the effective use of wetlands, improving biodiversity, ecotourism and revenue generating for nearby communities.

There are more to the initiatives, with the government encouraging people to adopt sustainable ways for our safer future. But all these come down to difficulties which make these initiatives implementation an obstacle. Therefore to overcome the difficulties, a collaboration with countries is needed in order to remain aligned with our sustainable goals and achievements. Such an example is the partnership with Denmark under the Green strategy. The trade between the countries shows the importance of Denmark for our geopolitical position in emerging as a global leader in green energy development.

India Denmark trade ties

Trade	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
India export	733.96	755.25	944.15	911.39	856.24
Growth		2.9	25.01	-3.47	-6.05
India's import	632.4	589.13	888.73	770.37	917.58
Growth %		-6.84	50.86	-13.32	19.11

Source: Department of commerce, Ministry of Commerce an Industry, Government Of India

India's exports (value in US$ Million)

Commodity	FY 2023-24	Growth %
Articles of apparel and clothing accessories, not knotted , crocheted	156.16	-20.17
Iron and steel	119.62	82.13
Nuclear reactors, machinery, mechanical equipment	75.01	-9.31
pharmaceuticals	36.26	-9.97
Electrical machinery and equipment and parts , reproducers, television image and sound recorders and reproducers parts	42.54	7.8

Source: Department of Commerce, Ministry of Commerce, Government of India

India's imports (value in US$ Million)

Commodity	FY 2023-24	Growth %
Nuclear reactors, boilers, machinery,mechanical equipment	317.4	165.89
Pharmaceuticals	163.05	-3.88
Electrical machinery, sound recorders, reproducers, television image, sound recorders and parts	60.83	-2.36
Organic chemicals	47.14	0.09
iron and steel	33.32	-38.79

Source: Department of Commerce, Ministry of Commerce, Government of India

The Danish government invested around 1.81 billion dollars in India between 2020 and 2021, the Danish companies are working with energy sectors like agriculture, renewable energy, urban development and have also set up manufacturing units under the initiative of 'Make in India'. This partnership was designed by undertaking various aspects, to help India address its air pollution crisis the Danish companies have offered to assistance, including stubble cro burning. Its also created India Denmark energy parks, the joint study held in 2023 in an event in Chennai by the Danish Energy Agency and Indian Ministry of New and Renewable Energy which published a plan highlighting build plan for selected zones of coasts of Gujarat and Tamil Nadu, consultations for the first offshore wind parks in India for these offshore wind parks the sites for auctions consists 14 sites in Tamil Nadu and 1 in Gujarat. The India Denmark trade grew by 78% in 2016 to 2021, with major exports from India to Denmark being textile, apparel, iron and steel,

metal and import of pharmaceuticals, power generating machinery, organic chemicals. The 75th Indian independence was also celebrated in Denmark highlighting themes of 'Azadi ka Amrit Mahotsav', there are streets and places named after Indian leaders such as Gandhi Plaene or Gandhi park and Nehru Road in Denmark. Memorandum of Understanding was signed between the two countries aiming to enhance intellectual property cooperation, and to protect traditional knowledge. Therefore this agreement is not solely based on economic or sustainable development but covers all the other aspects that surround an economy.

Challenges:

Even if both countries are working towards a beer future and have undertaken great measures, these countries still have their set of problems to align with their commitments to sustainability. For example, Denmark's largest contributor to greenhouse gases comes from its agricultural sector especially from livestock production and mitigating it with the help of sustainable effective strategy becomes a hurdle, due its agricultural practices measuring the share of emissions from individual farms and accordingly implementing effective policies becomes difficult. If we talk about India we face several challenges on our path toward sustainability such as insufficient funds, in 2023 and 2024 budgets there was a compromise in the prioritisation for green growth, Rs 3,265 crore for environmental issues, India alone adds 10 million people to the labour force every year hence it becomes a lot of pressure to sustain the implementation of policy measures. Irrigation being the largest user of surface and groundwater, demand for the same will increase in domestic and industrial sectors and therefore urgent need for water efficiency policies especially for irrigation. Burning of fuel wood and biomass such as dried waste from livestock, lack of sewage treatment, lack of flood control and drainage system, custom practices and other unhealthy and unhygienic practices near rivers all add up to pollution which becomes a major challenge for us to implement effective policies. Over exploitation of resources such as water and land which leads to scarcity and degradation, rapid urbanisation has put pressure on existing infrastructure caused by overcrowding, traffic congestion, increased demand for resources. Therefore, these factors add up to our difficulties to achieve the sustainable growth goals. To address such challenges we need to partner up with entities in order to acquire economic support, skill and innovation, and implementation of moral obligations so as to achieve our objectives.

A way forward:

India Denmark green strategic partnership sums up the importance of the agreement and of course partnering up with other nations to gain expertise and innovation, skills, technology for the efficient implementation. The trade ties between the two countries and enthusiasm of the countries to work together may not solve the climate change crisis overnight or bring us milestones of our sustainable development goals but it would definitely help in the path of major global players in the geopolitical transition. Timely study of the implemented policies is required, thorough and continuous political consensus is also needed.

Conclusion:

India Denmark just like how the given governments of the two contrives are working in accordance to their respective sustainable development policies, the Danish government is also assisting India in its way to achieve milestones. With more development of the bilateral relations of the two countries, more will benefit as the exchange of ideas, innovation, skills,technology, research and development projects takes place.

References:

1) U. S. Rathod, S. A. Thomas, F. S. Maruti, P. Balasaheb Kadam, H. L. Jadhav and M. Jamal Bdair, "Reinforcement Learning for Sustainable Business Model Development in Social Entrepreneurship," *2024 Second International Conference Computational and Characterization Techniques in Engineering & Sciences (IC3TES)*, Lucknow, India, 2024, pp. 1-5, doi: 10.1109/IC3TES62412.2024.10877619.
2) Dagde, S. B., & Jadhav, H. L. (2024). Research on International Trade as a Factor of Growth of Developing Economies. *Sanshodhak*, *16*(1), 70–76. https://www.academia.edu/127873049/Research_on_International_Trade_as_a_Factor_of_Growth_of_Developing_Economies
3) Harale, G. D., Bhave, A. V., & Pawar, G. G. (2024). RECENT TRENDS IN COMMERCE, MANAGEMENT, ACCOUNTANCY AND BUSINESS ECONOMICS (1st ed., Vol. 1) [Online]. Rayat Shikshan Sanstha's, Abasaheb Marathe Arts and New Commerce, Science College, Rajapur Dist. Ratnagiri. https://www.researchgate.net/publication/379453020_Recent_Trends_in_Commerce_Management_Accountancy_and_Business_Economics
4) Harale, G. D., & Pawar, G. G. (Eds.). (2024). Viksit Bharat @2047: Challenges and Opportunities (1st ed., Vol. 1) [Online]. Rayat Shikshan Sanstha's, Abasaheb Marathe Arts and New Commerce, Science College, Rajapur Dist. Ratnagiri. https://www.researchgate.net/publication/378610404_Viksit_Bharat_2047_Challenges_and_Opportunities.
5) World Bank, 2014, India: Green Growth- overcoming environment challenges to promote development
6) Ministry of Foreign Affairs of Denmark, 2022, Upcoming Offshore Wind-Park in India
7) Press Information Bureau, Ministry of New and Renewable Energy, 2024, India's Renewable Energy Capacity Hits New Milestone
8) https://en.wikipedia.org/wiki/Environmental_issues_in_India#:~:text=There%20are%20multiple%20environmental%20issues,worse%20between%201947%20through%201995.
9) https://blog.mygov.in/editorial/indias-green-leap-transitioning-to-clean-energy-for-a-sustainable-future/
10) https://www.ey.com/en_in/insights/energy-resources/powering-the-future-india-s-role-in-global-energy-transition
11) Embassy of India, 2025, India-Denmark Relations
12) https://indien.um.dk/en/the-trade-council/tradecouncil-in-india
13) International Monetary Fund, 2021, Denmark's Ambitious Green Vision
14) Ministry of Foreign Affairs of Denmark, Green Strategic Partnership
15) Ministry of Commerce and Industry, Department of commerce
16) https://stateofgreen.com/en/about/denmarks-green-transition/