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## **Study shows South Africa is well placed to lead the production of zero carbon shipping fuels**

**Country's location, economic development and vast renewable energy sources make it well suited to be a hub for green maritime fuel.**

A study by Ricardo and Environmental Defense Fund for the P4G Getting to Zero Coalition Partnership finds that South Africa holds an untapped opportunity to supply the global shipping industry with zero carbon fuels. The production of green hydrogen-derived fuels can help to meet decarbonization targets and act as a catalyst for the country's economy – opening new export markets, supporting an equitable transition, and creating the jobs of the future. The study explores the economic and environmental potential for the implementation of zero carbon shipping fuels through the shipping sector of South Africa.

International maritime transport is on the verge of an energy revolution. Within this decade, the shipping industry must start to replace traditional heavy bunker fuel with new zero carbon shipping fuels generated from renewable energy to meet decarbonization targets. South Africa has vast renewable energy sources, and the country has committed to reach net zero emissions by 2050.

*“Our study shows that South Africa has an abundance of renewable energy potential. It is enough to supply the country's domestic electrical demand as well as the production of zero carbon fuels to supply commercial vessels refueling in its international ports. The adoption of zero carbon propulsion technologies at South Africa's ports could attract investment of between 122 and 175 billion Rand in onshore infrastructure by 2030. All that is needed to unlock this investment is the right policy incentives set at the International Maritime Organization,”* says **Aoife O'Leary, Director, International Climate, Environmental Defense Fund.**

The report finds that South Africa's geographical location and economic development make it particularly well suited to distribute zero carbon fuels for the South African shipping sector, and export to international markets.

*“South Africa has the opportunity feed into the growing global demand for decarbonized materials, products and services by offering bunkering capability for zero carbon fuels to vessels of all types. With access to busy shipping routes, abundant renewable energy potential, and experience handling these and other fuels, South Africa is in a great position to produce the shipping fuels of the future, access a growing global market, and thus catalyze a new low carbon economy,”* says **Olivia Carpenter-Lomax, future energy specialist and project lead, Ricardo.**

*“It is easy to make a generalisation that many developing countries are positioned to gain from a future hydrogen economy and hydrogen derived fuel use in shipping. This report goes into the important specifics of that opportunity for South Africa and finds not just why this is necessary, but the numerous reasons to be optimistic and seek to accelerate progress towards this future,”* says **Tristan Smith, Reader in Energy and Shipping, University College London.**

Several zero carbon fuels can potentially be used in shipping. The abundance of renewable energy resource in South Africa means that shipping fuels can be derived from renewable electricity generation.

*“The report identifies hydrogen and ammonia as the most suitable options for large commercial vessels while South Africa’s small domestic vessels can be supplied through direct electrification using onboard batteries and motors. Shipping’s demand for zero carbon fuels could provide a constant long-term revenue stream, which is an attractive feature for investment,”* says **Ingrid Sidenvall Jegou, Project Director, Global Maritime Forum.**

The adoption of zero carbon shipping fuels depends on global market requirements. In order for a successful adoption of zero carbon shipping fuels, South Africa should look globally. Vessels adopting zero carbon fuels bunkering in various ports around the world must have the opportunity to refuel along their journey.

*“The transition to a zero emission future is for and about people. Achieving an inclusive, globally scalable transition requires a systems-oriented, transparent approach. This requires standards to be set by the maritime industry to encourage the zero carbon transition not only for vessels but for global ports. South Africa can be a part of driving international standards as an important player in the international shipping sector and as a pioneer in zero carbon fuels,”* says **Margi Van Gogh, Head of Supply Chain & Transport, The World Economic Forum.**

Adopting zero carbon shipping fuels has significant benefits and synergies for South Africa far beyond the shipping sector and is in line with South Africa’s commitment to reach net zero carbon by 2050.

Zero carbon fuels may also be used in wider industries such as fertilizer and steel production and could act as a catalyst to achieving South Africa’s overall carbon commitments. There is the potential to create a wide range of jobs within the supply chains of zero carbon fuels, which can support South Africa’s just and equitable transition as jobs in coal mining and coal-based electricity generation decrease.

The report highlights the ports of Saldanha Bay, Ngqura (Coega) and Richards Bay as great examples of how South African can capitalize on a zero carbon fuel transition due to established shipping routes and significant port export hubs.

*“Zero carbon shipping presents South Africa with the opportunity to usher in “a new economy in a new global reality”, to quote President Ramaphosa in our national Economic Reconstruction and Recovery Plan. For this, the SBIDZ supports this research in its efforts to stimulate solutions and investment into a global megatrend that is becoming the agenda of our time. It will require sustainable capital investment into new technologies, new vessel designs, new landside infrastructure and a shake-up of the services and logistics sub-sectors. This is exactly the work the SBIDZ is vested in as a catalyst for economic growth and transformation, and the unique potential of the Port of Saldanha Bay as the first Freeport in South Africa,”* says **Kaashifah Beukes, Chief Executive Officer, Saldanha Bay Industrial Development Zone.**

**Download the full report** *South Africa: fueling the future of shipping - South Africa’s role in the transformation of global shipping through green hydrogen-derived fuels* [here](#).

**For further information:** Head of Communications, Torben Vemmelund at [tve@globalmaritimeforum.org](mailto:tve@globalmaritimeforum.org) or +45 22241446.

## **About the Getting to Zero Coalition**

The Getting to Zero Coalition, a partnership between the Global Maritime Forum, Friends of Ocean Action and World Economic Forum, is a community of ambitious stakeholders from across the maritime, energy, infrastructure and financial sectors, and supported by key governments, IGOs and other stakeholders, who are committed to the decarbonization of shipping. The ambition of the Getting to Zero Coalition is to have commercially viable zero emission vessels operating along deep-sea trade routes by 2030, supported by the necessary infrastructure for scalable net zero-carbon energy sources including production, distribution, storage, and bunkering.

## **About P4G**

P4G – Partnering for Green Growth and the Global Goals 2030 - is a global delivery mechanism pioneering green partnerships to build sustainable and resilient economies. P4G mobilizes a global ecosystem of 12 partner countries and 5 organizational partners to unlock opportunities for more than 50 partnerships working in five SDG areas: food and agriculture, water, energy, cities and circular economy.

## **About the Global Maritime Forum**

The Global Maritime Forum is an international not-for-profit organization dedicated to shaping the future of global seaborne trade to increase sustainable long-term economic development and human wellbeing.

## **About Friends of Ocean Action**

Friends of Ocean Action is a unique group of over 55 global leaders from business, international organizations, civil society, science and academia who are fast-tracking scalable solutions to the most pressing challenges facing the ocean. It is hosted by the World Economic Forum in collaboration with the World Resources Institute.

## **About the World Economic Forum**

The World Economic Forum is the International Organization for Public-Private Cooperation. The Forum engages the foremost political, business, cultural and other leaders of society to shape global, regional and industry agendas. It was established in 1971 as a not-for-profit foundation and is headquartered in Geneva, Switzerland. It is independent, impartial and not tied to any special interests.

## **About Environmental Defense Fund**

Environmental Defense Fund Europe is an affiliate of Environmental Defense Fund (EDF), a leading international non-profit organisation that creates transformative solutions to the most serious environmental problems. Since 1967, EDF has used science, economics, law and innovative private-sector partnerships to bring a new voice for practical solutions.

## **About University College London Energy Institute**

University College London Energy Institute Shipping Group aims to accelerate shipping transition to an equitable, globally sustainable energy system through world-class shipping research, education and policy support. The group specialises in multi-disciplinary research anchored in data analytics and advanced modelling of the maritime sector.

## **About International Association of Ports and Harbors**

The International Association of Ports and Harbors (IAPH) was formed in 1955 and over the last sixty years has grown into a global alliance representing over 180 members ports and 140 port related businesses in 90 countries. The principal aim of IAPH revolves around promotion of the interests of Ports worldwide, building strong member relationships and sharing best practices among our members.

## **About Ricardo**

At Ricardo, our vision is to create a world where everyone can live sustainably: breathing clean air, using clean energy, travelling sustainably, accessing clean water and conserving resources. Adopting zero carbon shipping fuels would bring the world closer to these ideals. Since the 1950s, Ricardo has worked to deliver improvements in air quality and pioneered the use of renewable energy technologies. We are currently working on the implementation of the Paris Agreement on climate change, helping countries to realise their plans for reducing greenhouse gas emissions.