



**ESPO's Roadmap to implement
the European Green Deal objectives in ports**

February 2020

Executive Summary

1. European ports welcome Europe's ambition to be the world's first net zero emission area by 2050. This ambition must be delivered in the most effective way. The competitiveness of Europe's economy must be safeguarded. Achieving this objective will require an unprecedented level of cooperation across all policy departments and stakeholders.
2. European ports are at the crossroads of supply chains, are clusters of energy, industry and blue economy. They can be a key strategic partner in making the European Green Deal happen.
3. The greening of the shipping sector is a priority for European ports and Europe's ports are committed to playing their part in helping the shipping sector to make this transition. Close cooperation between ports and shipping lines is required. This cooperation is also largely dependent on decisions of energy producers, energy providers and cargo owners.
4. European ports are diverse and there is no one approach which can be mandated for all ports. Instead, each port should develop a roadmap appropriate to its particular circumstances to prepare for the energy transition of shipping.
5. A goal-based and technology neutral approach is needed to ensure the uptake of clean fuels for shipping, support innovation and avoid stranded assets.
6. A gradual approach should be developed to reduce emissions at berths with an initial focus on berths close to urban areas and a focus on particular segments such as cruise ships and ferries. But such an emission reduction standard at berth is in itself not sufficient to achieve the decarbonisation of shipping. Over time, the objective of zero emissions at berths is achievable. By 2030, CO₂ emissions from ships at berth and in ports should be reduced by 50% on average and across all segments of shipping.
7. Onshore Power Supply (OPS) should be encouraged as an important part of the solution. However, alternative solutions which achieve the same objectives should be encouraged and allowed.
8. LNG's role as a transition fuel should be recognised and certainty is needed about the support for investments made from 2021 to at least 2027.
9. Given the international nature of the shipping sector, a global approach is essential if market-based measures are to succeed. The EU should increase the pressure on the IMO to roll out meaningful measures by 2023. ESPO believes that any European proposals such as an Emission Trading Scheme (ETS), a levy or an innovation fund must

be thoroughly examined in view of safeguarding the competitiveness of the EU port sector.

10. The review of the Energy Taxation Directive should support the uptake of all sustainable clean fuels, including OPS, by introducing a permanent tax exemption for all of them.
11. ESPO fully recognises and supports the role of rail and inland waterway transport as sustainable hinterland modes for freight. Motorways of the Sea and Short Sea Shipping can however be just as effective as rail and inland waterways in providing an alternative to road transport. In addition, pipelines can play a crucial role in the transport of certain commodities and the implementation of certain decarbonisation technologies.
12. Many European ports are important clusters of energy and industry. These ports are players and partners in achieving the energy transition. Greening “the port” means much more than greening the transport side. All industry players in the port should have their agendas, goals and plans and the port managing body must support the industries in the port in their pathways to a more sustainable future.
13. Seaports and waterborne transport should be seen as a priority in ensuring resilience to climate change. In that respect, European ports welcome the European Green Deal’s commitment to adopt a new and more ambitious strategy on adaptation to climate change.
14. Digitalisation will increase the transparency in the supply chain and can help create awareness of the carbon and environmental footprint of the whole supply chain. By improving the communication, gathering and exchanging real-time information among different parties, logistics processes can be optimised and transport infrastructure and means (avoiding empty trucks, trains and ships) can be used in a better way. Digitalisation must be seen as an additional instrument to meet the Green Deal objectives.
15. A strong MFF is essential for Europe to invest in a sustainable future. Getting an agreement on a strong MFF must show that both European and national policy makers walk the talk. Extensive support from the Connecting Europe Facility (CEF) is an absolute prerequisite for investments in clean fuel infrastructure in ports, especially if there are mandatory provisions on the installation of certain technologies. Both core and comprehensive TEN-T ports should be eligible. Support will also be important for turning port areas into clean energy hubs and for ensuring connectivity to clean energy grids.

1. European ports welcome Europe's ambition to be the world's first net zero emission area by 2050

The European Sea Ports Organisation (ESPO) **welcomes Europe's objective** set out in the European Green Deal to become the world's first net zero emission area by 2050 and to reduce emissions by 50% towards 55% compared with 1990 levels by 2030. **The European Union has to take the lead in transforming Europe's economy and society** and setting sail towards a different path of growth in Europe.

European ports agree that there is no time to waste. But it is important that any new EU legislation to achieve the European Green Deal's objectives is brought forward with proper impact assessments including public and stakeholder consultation. Transparency, accountability and legitimacy of the proposed measures are a prerequisite for **delivering Europe's ambition in the most effective way and safeguarding the competitiveness of the European economy**.

Developing the measures to achieve the European Green Deal objectives will touch upon many policy areas and will impact on a very wide range of stakeholders. It **will require an unprecedented level of co-operation** and understanding across all relevant policy departments and their stakeholders.

2. European ports are a strategic partner in making the European Green Deal happen

European ports are at the crossroads of the supply chain. As clusters of transport, energy, industry and the blue economy, **ports add great value to Europe's economy and society and are at the service of Europe's port cities, its citizens and local communities**. They are a strategic partner in making the ambitious European Green Deal happen.

91% of European ports are located in or are very close to urban areas. Port managing bodies are mission driven entities and the relationship with the local community is a top priority for them¹. In addition, many European port cities have set their own even more ambitious emissions reduction targets than those existing at national level. Ports are already working together with the cities to achieve the objectives of the Paris Agreement.

¹ ESPO has published an annual report since 2016 highlighting the environmental performance of European sea ports based on selected benchmark indicators with the aim to increase the transparency and accountability of the European port sector. ESPO's 2019 environmental report: <https://www.espo.be/media/Environmental%20Report-2019%20FINAL.pdf>

Around 40% of all goods shipped to and from European ports are energy-related². European ports are crucial nodes in Europe's energy supply network. Energy transition is a real game changer for many ports. At the same time, the energy transition agenda offers new business opportunities to many European ports (including production and supply of renewable energy, off-shore renewable energy projects, bio-fuel industry, carbon capture and storage, circular economy). Consequently, **many European ports are an essential business partner in guiding Europe's economy and society through the energy transition.**

Finally, it must be clear that no one is more directly affected by rising sea levels than ports. Their operations are among the most exposed to extreme weather conditions such as floods and storms. We need all hands-on deck to prepare for and to limit the economic and environmental impact of climate crisis.

3. The greening of the shipping sector is a priority for European ports

Even if shipping remains the most CO₂ efficient mode of transport, the shipping sector is responsible for the largest share of supply chain related emissions in the port. The other important source of emissions in many ports is industry. So, in order to deliver its fair share to international climate reduction ambitions, shipping must decrease its carbon footprint rapidly.

ESPO reiterates its **support for** the agreement reached in March 2018 in the International Maritime Organisation (IMO) to **reduce CO₂ emissions from ships by at least 50% by 2050 compared to 2008**, whilst pursuing efforts towards phasing them out altogether. European ports however realise that the 2018 IMO CO₂ target might not be ambitious enough in light of the European Green Deal objective.

European ports stress the importance of the **polluter pays** principle. The **greening of shipping is a responsibility that primarily lies with the shipping sector itself.**

European ports are at the interface between land based and maritime businesses and are committed to facilitating the greening of shipping and its transition to a zero-emission future in cooperation with the shipping sector.

The greening of shipping requires **close cooperation between ports and shipping lines** to match the supply and demand of clean fuels and in order to avoid stranded assets.

This co-operation is **largely dependent on decisions of energy producers, grid managers, suppliers and cargo owners.** All of these players must be centrally involved in the consultation

² https://www.espo.be/media/Trends_in_EU_ports_governance_2016_FINAL_VERSION.pdf

between ports and shipping lines in view of defining the future energy mix for the shipping sector.

The dialogue among ports themselves is equally important.

In addition, when clean fuels are introduced, it is important that proper safety requirements and permits are in place to store and bunker clean fuels in ports and that these regulations are respected by port users. The development and uptake of clean fuels (including storage and bunkering) will also require the necessary space in ports.

Finally, ports themselves are committed to greening their own fleets and operations within their own remit.

4. European ports must develop a roadmap to prepare for the energy transition of shipping

European ports are very diverse in the markets they serve, the type of vessels they accommodate, geographical location, size, tasks and responsibilities.

To achieve the objectives of the European Green Deal and to help the transition of the shipping sector each European port should develop **a roadmap featuring a detailed plan of pathways for facilitating the greening of the shipping sector**. These roadmaps should take account of each port's particular circumstances. The roadmap should also be accompanied by a timeline which engages all relevant stakeholders: the port, shipping lines and the energy sector (producers and providers).

As part of the roadmap, European port managing bodies should properly **assess the need for investments in clean fuel infrastructure on the basis of concrete criteria** including:

- The complete life cycle of the fuel including production and transportation up to the point of consumption;
- Emissions of NO_x, SO_x and PM in addition to GHG emissions;
- Safety of bunkering operations, the infrastructure and the product;
- Technical maturity of fuel (beyond showcase applications);
- The financial resources required to realise the necessary investments.

This assessment must take place in full respect of the competences and responsibilities of the port managing body.

5. A goal-based and technology neutral approach is needed to ensure the uptake of clean fuels for shipping without curtailing technological innovation

Directive 2014/94/EU on Alternative Fuels Infrastructure (the AFID) aims to facilitate the use of alternative fuels in the transport sector by mandating infrastructure for specific fuels.

In particular, the 2014 Directive obliges Member States to ensure that there is an appropriate number of LNG refuelling points (fixed or mobile) in TEN-T core ports by the end of 2025. It also requires Member States to ensure that there is Onshore Power Supply (OPS) with a priority in TEN-T core ports by the end of 2025 except in circumstances where there is no demand and the costs would be disproportionate to the benefits, including environmental benefits.

European ports are already investing in LNG and OPS infrastructure to meet the requirements of the AFID. **European ports recognise the importance of LNG as a transition fuel and consider OPS as an important pillar of the future energy mix.** Investments in those technologies should be further encouraged.

However, there is still uncertainty as to which clean fuels will be most suitable for each segment of shipping. ESPO therefore believes that any new legislation should retain the current flexibility for **any clean fuels or technologies which provide equivalent solutions.** New legislation should allow the uptake of a variety of clean fuels, rather than prescribing specific fuels for shipping.

A **technology neutral approach** is an absolute prerequisite to **limit the risk of stranded assets and to support innovation in different promising technologies.** For European ports, a **goal-based approach with emission reduction standards accompanied by port roadmaps** is the best way to ensure that Europe's greening objectives are achieved.

As part of the scaling up and acceleration of the uptake of clean fuels for shipping, European ports are in favour of clarifying the concrete criteria for **maritime fuels to be considered as "clean fuels"**.

6. A gradual emission reduction standard for ships at berth should be part of a goal-based approach

The greening of shipping must be the primary goal.

European ports understand that reducing emissions at berth can contribute to this objective albeit to a limited extent³.

European ports want to see an early start to the gradual implementation of an EU wide standard to reduce emissions at berth not only for CO₂ emissions but also for NO_x SO_x and PM emissions. Any proposal to achieve this should be seen together with **ESPO's proposed roadmap for energy transition of shipping.**

Many European ports have developed port emission inventories. These give ports more insight into the emissions in the port area and can also be used for the development of emission reduction strategies as part of the roadmap.

An EU standard for the reduction of emissions at berths should initially **address berths close to urban areas and should target specific segments of shipping such as cruise ships and ferries.** The standard should be subsequently expanded to all segments of shipping taking into account progress on the development of clean technologies. Over time, **the objective of zero emissions at berths is achievable. By 2030, CO₂ emissions from ships at berth and in ports should be reduced by 50% on average and across all segments of shipping.**

Any technologies available to achieve the gradual emission reduction standards should be accelerated and encouraged. These technologies include shore-side electricity, hybrid solutions, hydrogen, ammonia or synthetic fuels. A goal-based approach would give clear guidance to the shipping sector on the objectives to be reached while providing necessary flexibility for shipping, energy suppliers and ports on the choice of technologies allowing them to choose the most effective solutions.

Ports understand that the reduction and ultimate elimination of CO₂ emissions at berths, while necessary for the reduction of overall emissions from shipping, is not, of itself, sufficient.

³ CO₂ emissions at berth only count for a few percentages of the maritime transport related emissions.

7. Onshore Power Supply (OPS) should be encouraged as an important part of the solution

European ports believe that OPS will be most effective for shipping segments which will be electricity powered such as ferry services operating over short distances.

OPS can also make an important contribution to improving air quality when used by ships that have high energy consumption, which spend many hours at berth and/or are berthing near the cities (notably cruise ships).

Many European ports are already developing projects to test the technology and to identify the technical and operational challenges.

Based on this experience, it is important to acknowledge:

- The high cost of OPS solutions: The high cost is mainly related to: connecting the plug to the power station, the so-called connection to the grid (in many cases, long distances have to be covered and in some cases the link to the grid has to pass heritage or protected city areas) and the frequency transformation of electricity (land-based converters). Europe's grids are at 50 Hz and have to be increased to the higher grid of many ocean-going ships (60Hz). This requires investments in frequency and high voltage converters. Moreover, OPS installations close to city areas require the port to invest in an adequate look-and-feel to host the voltage converters.
- Electricity shortage (in particular green grid) at city or regional level is in some cases an additional barrier: Shore-power pushes emissions from ships to power stations. In view of really delivering in terms of climate efficiency, power stations must provide green energy and in that respect some Member States do better than others. The issue should thus be approached in a real holistic way. Besides, the specific case of the outermost regions should also be taken into account.
- OPS is an important solution for reducing emissions at berth, but is in principle not addressing the overall issue of CO₂ emissions from shipping, with the potential exception of ships engaged in short voyages. OPS infrastructure in ports is not enough in itself to green maritime transport.
- The attractiveness of using shore side electricity depends to a large extent on the price and taxation of (renewable) energy in each country (see also point 10).
- The implementation of OPS is only possible if vessels are also equipped with this technology.

While ESPO is supportive of a policy framework that encourages investments in OPS and takes away the barriers for using OPS, it must be assessed case-by-case against other green solutions and must be seen in the context of the rapidly evolving zero-emission propulsion technologies (including hydrogen and ammonia).

For ESPO, any **new measures or legislation at EU level regarding OPS should also allow alternative solutions with equivalent environmental benefits.**

8. LNG's role as a transition fuel should be recognised

LNG has been one of the compliant fuels for shipping to meet the 0.1% Sulphur cap in SECA areas (since 2015) and the overall 0.5% sulphur cap which is in place since 1 January 2020. Current LNG infrastructure can also be used for bio-LNG.

LNG will remain a transitional fuel at least for the near future.

ESPO's 2019 environmental report shows that 32% of surveyed ports already have LNG bunkering facilities available, most of these being mobile installations. In addition, one in four ports have ongoing LNG bunkering projects⁴.

ESPO believes that EU support for LNG investments must continue at least during the period 2021-2027 in order to give legal certainty to planned investments and in order not to punish first movers.

9. Market-based measures and incentives

Given the international nature of the shipping sector, a global approach is essential if market-based measures are to succeed.

The EU legislative proposals should increase the pressure on the IMO to roll out meaningful measures by 2023. ESPO believes that any European proposals such as an Emission Trading Scheme (ETS), a levy or an innovation fund must be thoroughly examined in view of safeguarding the competitiveness of the EU port sector.

In essence, **a substantial part of the revenues from any market-based mechanism introduced must be used for port infrastructure investments** and for supporting the use of clean fuel infrastructure.

Environmentally differentiated port fees (incentive schemes) could be further adapted to the current challenges and encouraged. While streamlining between ports should be encouraged, the introduction, modalities of application and the level of environmental

⁴ ESPO's environmental report 2019 : <https://www.espo.be/media/Environmental%20Report-2019%20FINAL.pdf>

charges must remain a decision for each port managing body, taking into account the local situation and local environmental concerns and **in accordance with the port's own roadmap**.

Some European ports consider port incentive schemes as a useful instrument to reward frontrunners to go beyond regulatory standards, but their financial impact is not in itself important enough to change the investment decisions of ship owners. **Port fees make up a small part of the total port costs for ships and an even smaller part of the total cost of a ship's journey**. At the same time, a discount on port dues can also reduce the capital available to ports to invest in green infrastructure.

10. The review of the Energy Taxation Directive must provide for a permanent and EU wide tax exemption for all clean fuels and clean sources of energy

Under the current Energy Taxation Directive (2003/96/EC), a tax exemption can be provided only for OPS. Even for OPS though, a tax exemption is time-limited and Member States have to go through a burdensome administrative process at EU level before obtaining it. As a result, so far, only Sweden, Germany, Denmark and Spain have applied for and been provided with a temporary permit by the EU to apply a reduced rate of taxation to shore-side electricity for ships.

ESPO believes that the **review of the Energy Taxation Directive should support the uptake of all sustainable clean fuels**, including OPS, by introducing a **permanent tax exemption** for all of them.

In the long run, policy must aim at fair and just taxation, guaranteeing a level playing field between all modes of transport.

11. Short Sea Shipping and pipelines are important modal shift options in EU inland freight transport

75% of inland freight transport is currently by road. The European Green Deal seeks to achieve a **modal shift** from road to rail and inland waterways. ESPO fully recognises and supports the role of rail and inland waterway transport as sustainable hinterland modes for freight.

However, ESPO also believes that **Motorways of the Sea and Short Sea Shipping can be just as effective as rail and inland waterways** in providing an alternative to road transport.

The further greening of the EU short sea shipping segment is developing fast and will make SSS an even more attractive alternative to road transport. In particular, the EU ferry sector

has already introduced cleaner vessels and many promising projects are close to being realised.

In addition, **pipelines** are used to connect industries in the port, to ensure the connection among industry clusters and users. Pipelines can play a crucial role in the transport of certain commodities (such as chemicals, fuels). They are vital for the implementation of certain decarbonisation technologies (such as carbon capture and storage). **Pipelines** should thus not only be considered as an energy infrastructure but also as a **sustainable mode of transport and should be part of the transport infrastructure network**.

12. Port energy clusters and port industry clusters are important players in delivering the Green Deal objectives

Many European ports are important clusters of energy and industry. Together, these clusters and ports are players and partners in achieving the energy transition.

Greening “the port” means more than greening the transport side. All industry players in the port should have their agendas, goals and plans and the port managing body must support the industries in the port in their pathways to a more sustainable future. This requires support for large investments in the provision of clean energy, connectivity of energy infrastructure networks and green grids (both pipelines and cables), as well as support for innovative technological projects in and between ports. In addition, ports can also attract new investments in clean energy and technology. At the same time, it is important to guarantee the security of energy supply for these industry hubs throughout the energy transition.

A sustainable European industrial policy should include an integrated approach towards European industrial clusters and prioritise investments in energy infrastructure and efficiency.

But ports are not only takers of energy; they **can also become important producers and providers of clean energy solutions for the economy**.

In addition, ports are an ideal location to develop **circular economy** projects. Both the presence of industry and the proximity to large urban agglomerations make them ideal places to turn waste into products.

If European port managing bodies are to become active partners in energy hubs (whether as facilitator, investor or even operator), the governance or business model of some ports might need to be reviewed.

13. Ports and waterborne transport are a priority in ensuring resilience to climate change

While climate resilience is important for all transport modes and infrastructure, seaports and inland waterways are particularly vulnerable to sea levels rise and to extreme weather conditions.

ESPO believes that seaports and waterborne transport should be seen as a priority in ensuring resilience to climate change. In that respect, **European ports welcome the European Green Deal's commitment to a new and more ambitious climate change adaptation strategy.**

Concrete measures to make inland waterway transport resilient should include removal of depth restrictions, increase in bridge height clearances and a better management of waterways and retention basins in Europe's inland waterways.

14. Further digitalisation of the supply chain is an additional instrument in achieving the Green Deal ambitions

By gathering and exchanging real-time information among different parties, logistics supply chains can be optimised and transport infrastructure can be used more efficiently (avoiding empty trucks, trains and ships). Increased and optimised data collection can also generate patterns of historical data which can better steer operations and prevent delays.

Additionally, digitalisation will increase the transparency in the supply chain and can thus be an effective means of creating awareness of the carbon and environmental footprint of the whole supply chain. Digitalisation can help supply chain operators towards sustainability.

The increase in the demand for maritime transport challenges the smooth operation of the supply chain. Delays in the maritime or hinterland leg and late departure/arrival or cancellation of ship calls is challenging for all port stakeholders. Better communication and coordination between all stakeholders in the supply chain can lead to gains in efficiency in the supply chain.

Digitalisation is an important additional measure to achieve energy transition of the maritime sector. Transport digitalisation projects must be further supported.

15. A strong Multi-Annual Financial Framework (MFF) is needed for achieving the Green Deal objectives

Achieving the Green Deal objectives in ports requires large investments which often have a slow, limited or uncertain return for the investing port managing body. This is the case for

investments in clean fuel infrastructure for shipping, for turning port areas into clean energy hubs and for ensuring connectivity to clean energy grids.

European ports believe that the risks of such investments have to be shared either through commitment by or financial participation of other stakeholders or through public financial support.

Looking at the investments in clean fuel infrastructure for shipping, **a certain level of financial commitment and risk sharing from the infrastructure users is essential**, especially while the price differential between conventional and clean fuels remains large. Appropriate measures must be put in place to ensure **that facilities such as OPS are used once the infrastructure becomes available in the port**. To avoid stranded assets, prior to an investment, bilateral agreements and letters of intent with regard to the use of the facilities between the port and the users should be encouraged. Moreover, supporting the deployment and use of infrastructure through revenues generated by market-based measures for shipping should be considered.

A strong MFF is essential for Europe to invest in a sustainable future. European and national policy makers must demonstrate real and tangible support for the European Green Deal if it is to achieve its objectives.

Connecting Europe Facility (CEF) support is an absolute prerequisite for Green Deal investments especially where there are mandatory provisions on the installation of certain technologies. Unlike the infrastructure pillar within CEF, that is geared towards core TEN-T projects, **investments in clean fuel infrastructure in ports (falling under the horizontal pillar) should be eligible for EU funding both for core ports and for comprehensive ports**. Other EU funding sources should also be looked at for that purpose.⁵ Furthermore, there is a need for financial support from Member States and regions.

CEF (TEN-E) will also be crucial to materialise the Green Deal objectives on energy transition in port areas for which major investments in new energy infrastructure (such as pipelines, in particular cross-border, and electricity grid) are key.

⁵ This position paper is not reflecting on the recently issued Investment pillar of the Green Deal. The ESPO position on the Sustainable Europe Investment Plan and the proposal for a Regulation establishing the Just Transition Fund will be subject of a separate ESPO position paper.



The European Sea Ports Organisation (ESPO) represents the port authorities, port associations and port administrations of the seaports of 22 Member States of the European Union and Norway at political level. ESPO has also observer members in Iceland, Israel, Ukraine and United Kingdom. ESPO is the principal interface between the European seaport authorities and the European institutions. In addition to representing the interests of European ports, ESPO is a knowledge network which brings together professionals from the port sector and national port organizations. ESPO was created in 1993.