Fiscal, Regulatory and Legislative Position Note

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Towards cleaner mobility: The French Association for Electrical Boats (AFBE) proposals to support the electrification of electric boats in the context of legislative, regulatory and fiscal changes

The AFBE is a professional association that brings together all the players in the electric **and plug-in hybrid boat ecosystem**, with the aim of **strengthening the reputation and credibility of the sector.**

To achieve these objectives, the AFBE has set itself several missions:

- **Technical exchanges** within the sector, through the sharing of best practices, innovations, standardizations and standardization, through internal technical training and collaboration resulting from these exchanges,

- The **promotion of electric motorisation** in the boating and naval industry, through events for professional operators, awareness-raising and training actions,

- Be the **point of reference for public authorities** and professional organisations.

In short

To achieve the objectives of **carbon neutrality by 2050** and a 40% reduction in CO2 emissions from ships by 2030 compared to 2008, as **proposed by the International Maritime Organization (IMO),** an ambitious energy and ecological transition is necessary in the maritime transport sector, which is responsible for nearly 3% of global greenhouse gas emissions. In the absence of decarbonisation actions, the expected exponential increase in the sector's activity could increase CO2 emissions by up to 130% compared to 2008 emissions by 2050.

This also concerns the inland waterway transport sector, whose decarbonisation objectives have been set by the European Commission as part of the Green Deal:

- 35% of pollutant emissions (CO2, particulate matter, nitrogen oxide, etc.) by 2035 compared to 2015 and total depollution by 2050 according to the Mannheim Declaration of the Member States of the Central Rhine Navigation Commission of 2018
- 55% of CO2 emissions in 2030 (base: 1990 values) as part of the European Commission's "Fit for 55" package

A sector of excellence and a major axis for the reconquest of French industrial technological sovereignty, electric mobility is becoming one of the credible engines for certain nautical and naval uses to meet current economic and ecological challenges, taking advantage of the progress made in the automotive industry, particularly with regards to batteries and fast charging solutions.

The introduction of adequate aid and regulatory support is essential to achieving the objectives of decarbonising the fleet. Manufacturers are now ready, and professionals are often willing to adopt electric or plug-in hybrid boats depending on the use, **provided that their operating cost is as competitive as that of 100% combustion engine boats**. Aid must therefore be sized according to the "total cost of ownership" (TCO). The legal framework must also evolve to encourage this transition: In addition, and without disrupting the most fragile professions, **the regulatory and legislative changes in favour of electric or plug-in hybrid motorisation** should make it possible to support the transition necessary to achieve the objectives mentioned above.

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Introduction

As a segment that is insufficiently electrified, passenger boats, urban river freight, pleasure boats, service boats (moorers, pilot boats, etc.) or fishing boats, and even RORO ferries (up to the transport of heavy vehicles) powered by batteries (including plug-in hybrids) are becoming **a reality for short crossings**. However, the costs of these boats remain higher than their thermal equivalents. Combined with a proactive policy of deploying charging infrastructure, **support mechanisms for the deployment of electric and plug-in hybrid boats must be put in place** to allow the market to take off and thus reduce **final costs as quickly as possible**. The IMO's decarbonisation targets will only be achieved in 2030 to the extent that a significant effort has been made on these types of ships.

These support measures must be part of a **multi-year approach** consistent with the multi-year energy programme (PPE). The electrification of uses is a credible alternative to fossil fuels to succeed in the ecological transition while ensuring the independence and energy sovereignty of France and the European continent.

Reminders on the advantages of electric and plug-in hybrid motorisation for the French naval, nautical and inland waterway industries

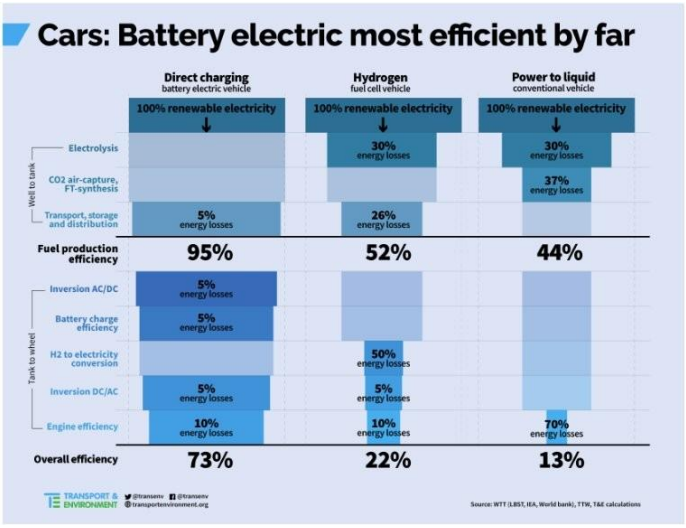
Net reduction in greenhouse gas emissions

Studies show the advantages of electric motorisation compared to "fossil" engines:

- **Greenhouse gas emissions**: Electric vehicles do not emit greenhouse gases locally but require energy to manufacture. And despite the emissions associated with battery manufacturing, electric vehicles in most cases have a significantly lower environmental impact over their entire life cycle compared to fossil fuel vehicles. These savings are all the more significant as consumption is high, especially for professional boats: the return on "carbon investment" is all the faster. This is systematically true in France, where 87% of electricity is decarbonized[1]. And advances in material recycling are still significantly improving these results.

[1] 2023 electricity report, RTE, 29 February 2024: https://analysesetdonnees.rte-france.com/bilan-electrique-2023/synthese

- **Energy consumption:** Electric vehicles are more efficient than vehicles with combustion engines. The energy efficiency of an electric motor is around 73%, compared to around 13% for a combustion engine. This means that an electric vehicle uses less energy to travel a given distance.



Improving air and water quality

In addition to the inherent advantages of electric motorisation in terms of improved air quality (no more NOx or SOx, a net reduction in fine particles), the electric boat has the advantage of not discharging hydrocarbons and engine oil, and of significantly reducing noise and vibration emissions, both in the air and in the water, where aquatic fauna is particularly sensitive.

On the other hand, the noise impact on aquatic fauna is significantly improved: numerous studies show this: ship noise can disrupt sound communication crucial for the mating and reproduction of certain species of aquatic fauna; Chronic noise stress from vessel traffic could have negative impacts on the health and reproductive success of aquatic populations. The reduction in noise and vibration emissions thanks to electric vehicles (especially if the speed is reduced) significantly improves the marine ecosystem.

Catching up with France

It is therefore essential to promote the development of electrically powered boats through appropriate regulatory, legislative and fiscal measures. France is lagging behind its European neighbours (particularly the Nordic countries and Great Britain) in the electrical sector of the shipbuilding, river and pleasure industries. A large number of French SMEs will then be able to develop more quickly and create jobs in the coastal areas where they are often located. France currently has dozens of players in the field of electric boats and hundreds of jobs, often qualified, could be created.

Battery recycling

Recycling batteries is crucial to reducing their environmental impact over their entire life cycle. Being able to recover and recycle recoverable materials such as metals reduces the carbon footprint associated with the extraction of new resources.

Several projects have enabled the implementation of the second-life use of car batteries in electric boats (Renault with Black Swann, Paris Yacht Marina, etc.).

The recycling of lithium-ion batteries is carried out by hydrometallurgical processes with a recovery efficiency of 95% and soon 99%.[2]

The industrial sector is being set up, with, for example, the interesting opening of battery recycling plants in Norway (Nordics, Hydrovolt, etc.).

Driven by the development of the electric car, the increase in the number of batteries will reach a critical size that will enable the recycling sector to develop to industrial volumes: this represents a huge challenge to be met on a large scale. However, this recycling represents a major step forward in terms of the circular economy, whereas the use of fossil fuels clearly does not provide such an opportunity (the extracted materials are released into the atmosphere without being able to be reused).

[2] https://www.lapresse.ca/debats/opinions/2023-07-27/la-realite-des-vehicules-electriques.php

I. Tax changes: supporting companies in their transition

One of the major challenges facing public policies will be to boost demand in a context of crisis. Thus, it is a question of putting in place mechanisms that will encourage companies to make purchases even when the context encourages them to postpone them.

A. Reforming depreciation mechanisms

The 2019 Finance Act had extended **the exceptional tax deduction scheme to boats equipped with an electric motor** (and hydrogen fuel cell) or any other carbon-free propulsion. An over-depreciation scheme allowed companies to deduct up to 30% of the purchase value of an electric boat until 31 December 2021. It is applicable to ships and vessels carrying goods or passengers in operation.

The current system, provided for in Article 39 of the General Tax Code, grants an exceptional tax deduction in the event of the acquisition of more environmentally friendly means of propulsion for the boat. The exceptional deduction rate on additional costs is 125% for equipment intended for main propulsion by carbon-free solution. This deduction is spread over the tax depreciation period of the vehicle and also applies to ships and boats that have been retrofitted.

This scheme is applicable until 31 December 2024.

The AFBE proposes to extend the over-depreciation scheme to all professional ships and boats and to run this depreciation scheme for very low-emission boats and vessels acquired over two years, until 31 December 2029 (extension of 5 years).

In order to simplify the process and avoid any debate on the methods of comparison, it is proposed **to apply a ratio based on the cost** for new boats: 30% of the total investment cost of the boat alone (excluding charging infrastructure).

The AFBE concludes by proposing:
- The extension of the over-depreciation scheme by 5 years (end of 2029)
- Simplify the calculation for new boats by a ratio of 30% of the total investment (excluding charging infrastructure

B. Personal Tax Credit

In order to encourage the switch to electric pleasure boats from individuals, the AFBE proposes the implementation of aid by tax credit, distinguishing between two categories of boats:

Electric motors with integrated battery: To encourage the adoption of these motors, the AFBE offers a flat-rate tax credit of €200 for the purchase of each outboard electric motor in this category. This aid aims to reduce the initial cost and facilitate the transition to greener propulsion solutions. Motors with built-in battery offer a compact and easy-to-install solution, making them ideal for small boats and users looking for a simple and cost-effective solution to go electric.

Electric motors with external battery system: These motors are more expensive to acquire due to the significant share of the battery. However, they offer a longer range, which is necessary for many uses, including longer trips or activities that require sustained power. For these systems, the AFBE offers a substantial tax credit of 25% of the cost of the battery (with a maximum of €5000), spread over 3 years. This tax credit would thus cover about 10% of the necessary budget in many cases. This measure aims to make these options more accessible and encourage their adoption in more ambitious energy transition projects. Motors with external battery system allow greater flexibility in terms of battery capacity and range, making it possible to have a variety of applications ranging from water sports to intensive professional activities.

The AFBE concludes by proposing:

- A €200 tax credit for motors with an integrated battery
- A tax credit of 25% of the cost of the battery (max 5000€) for motors with an external battery

C. Transfer of the TICPE exemption

The main obstacle to the acquisition of electric boats by professionals and public actors lies in the fact that many of them benefit from the TICPE exemption; This allows them to reduce their operating costs, which are sometimes essential for small private companies. But in return, this tax scheme does not encourage them at all to invest in electric boats that no longer consume petrol or diesel, since they then lose this tax exemption without compensation.

This does not make it easy for these players to enter an ecological transition process. Generally being without any subsidy, the purchase of an electric boat is currently considered for professionals as a loss of revenue, because they see their TICPE reimbursement disappear and they do not benefit from purchase aid in return. In other words, the reimbursement of the TICPE totally annihilates the main economic argument of the electric boat, namely the very low operating cost and reduced maintenance costs.

Making the same observation in other economic sectors, the government announced in 2023 that it wanted to embark on a process of gradual elimination of tax exemptions on diesel from road transport, construction and agriculture.

This is why **the AFBE is proposing a gradual abolition of tax exemptions on petroleum products for water-based leisure activities**: exemption from the TICPE, which amounts to subsidising carbon emissions for leisure activities, is difficult to justify at the present time.

The AFBE concludes by proposing:
- Gradual abolition of the TICPE for water sports activities

D. Exemption from electricity taxes

To encourage the decarbonisation of fishing, aquaculture and freight transport vessels, the AFBE also proposes exempting these professions from electricity taxes (excise duty on electricity, CTA (Contribution Tarifaire d'Acheminement) and, of course, VAT). This exemption should lead to a reduction of around 40% in the cost of electricity, the financing of which would be shared in part by the State and Enedis (French electricity distribution network operator).

In conclusion, the AFBE proposes:
- For fishing, aquaculture and freight, exemption from electricity taxes

E. Relief from the annual duty on marine pleasure craft

Since January 1, 2022, the annual tax on maritime pleasure craft includes the DAFN (annual francization and navigation fee) and DAP (annual passport fee). A DGAMPA project concerns a broader reform of the taxation of yachting.

The AFBE proposes that electric and plug-in hybrid boats should benefit from incentive provisions, as part of the ecological interest of their clean and carbon-free engines.

The AFBE concludes by proposing:
- The inclusion of carbon-free engines in the revision of the tax on recreational vehicles

F. Setting up a one-stop shop to simplify procedures

For inland waterways, VNF has already set up a one-stop shop for public subsidies thanks to the PAMI (Modernisation and Innovation Assistance Plan), as well as the CEE REMOVE programme, which is setting up an Energy Transition Support Group (GATE).

In the maritime sector, the beneficiaries of aid (CEE, CEREMA, ADEME, regional subsidies, etc.) stressed the need for information to be pooled and to have interlocutors in the field, in order to minimise the number of procedures that could in some cases lead to delays in the payment of aid. A **one-stop shop for the maritime sector offering integrated solutions (**similar to what has been done by VNF, i.e. the **pooling of information**, with a summary of the various funding possibilities and contacts: names and addresses, no generic addresses to websites) would be part of the simplification dynamic driven by the State while facilitating the procedures of beneficiaries.

The AFBE is willing to take on this role and to carry out the subsidy applications itself (retaining 5% of the subsidy amounts).

The AFBE concludes by proposing:
- The establishment of a one-stop shop for transition aid

G. Launch of a call for private initiative on bi-directional charging

The waterway transport sector is benefiting from the lead made by the automotive sector. One of the innovations that is being developed concerns bi-directional charging, also known as "V2G" for "Vehicle to Grid", "Vessel to Grid" for boats. It is a solution that allows the vehicle to supply energy from its batteries to balance the electricity grid, which allows the cancellation of peak loads: the vehicle returns energy when the grid needs it, recharges when the load on the grid is lower.

This is all the more interesting in winter when the boats are very often immobilized. During this time, V2G must make it possible to recover unused batteries. However, it is in winter that the demand for energy is the highest. All the batteries of all the ships immobilized in ports, and in particular dry ports, represent a remarkable potential to be exploited.

In order to encourage the development of this solution, which has both the advantage of helping to switch to electric motorization of ships and to improve the capacity of the electricity distribution network, the AFBE proposes that a Call for Private Initiative be launched in the metropolitan area for the installation of an experimental electric pontoon of 10 electric boats in a port. The selected consortium (Port + industrialists) will receive a subsidy of €200,000 for this experiment which will extend over a period of 3 years and which will be the subject of a report made public.

The AFBE concludes by proposing:
- The launch of an AMI on bi-directional charging, with a €200k grant

H. The lever of VAT

The standard VAT rate of 20% applies for commercial vessel rentals for pleasure purposes. The intermediate VAT rate, on the other hand, applies to passenger transport (public transport).

The AFBE proposes that, for short-term rentals with professionals, a 10% VAT be applied when it comes to electric or plug-in hybrid pleasure boats, in order to encourage companies and individuals to opt for a carbon-free rental.

In 2022, short-term boat rentals with professionals generated €65 million, while those between individuals posted a turnover of €27 million.

This measure would make it possible to support the pleasure rental sector in this transition, which often represents a prohibitive investment.

The AFBE concludes by proposing:
- The application of a VAT of 10% instead of 20% for electric boat rentals

II. Public policies: supporting technological development

A. Support for training in the sector:

The development of the electric boat sector must be supported by an increase in public funding for **continuing education**

- in the sector in terms of electric motorization technologies in shipbuilding: the objective is the **control of the propulsion chain**, including energy storage systems (batteries with a voltage above 60V, suitable for fast charging), electric motors and energy management systems, both in the field of engineering and for the training of technicians
- In the merchant navy and yachting: the objective is **for captains** and boat licence holders to learn how to maintain electric powertrains and manage autonomy in eco-driving. This support involves updating the educational frameworks.

The AFBE concludes by proposing:
- Continuous training for shipbuilding (construction techniques and complete maintenance)
- Continuous training for shipowners (simple maintenance and eco-driving)

B. Utility fleets: Gradual mandatory conversion

As with land vehicles, a roadmap for the energy transition of State fleets, local authorities and companies with a public service mission will have to be written, in order to gradually aim for carbon neutrality by 2050.

This objective could involve the gradual conversion of 100% combustion engines to electric or plug-in hybrid engines in existing public service fleets. In this way, public actors will be able to remove the main constraints and pave the way for decarbonisation by identifying use cases (ferries, river-sea shuttles, multi-purpose boats, pushers, etc.). New utility fleets would follow on relevant use cases with 100% electric or plug-in hybrid engines.

This roadmap could provide for the **end of fossil fuel engine purchases by 2035** (on the model of the automobile), with a target of a percentage of the public service fleet with progressive carbon-free engines (for example 25% in 2027, 50% in 2035, 100% in 2040, etc.).

The AFBE concludes by proposing:
- The gradual end of fossil fuel engine purchases for public fleets: 25% in 2027, 50% in 2035, 100% in 2040

C. 1%: mandatory on the waiting list with standardised charging socket

As a reminder, the LOM law was published in the Official Journal on December 26, 2019. While Article 1521-4 of 1 January 2022 of the Transport Code states an obligation for marinas with more than 100 berths to reserve 1% of their capacity for electric vessels, no implementing decree has yet been promulgated. The AFBE is asking for the implementation of this law, for the decrees to be drafted and for to be part of the consultation groups.

In particular, the decrees could specify the obligation to install charging infrastructure on the sites of these electric boats, equipped with Type 2 sockets (in accordance with the automotive standard, see appendix)

The AFBE concludes by proposing:
- The drafting of the decrees for the application of the 1% in ports, with the introduction of the charging socket standard

D. Port environmental certification:

More and more ports and port authorities are seeking AFAQ Clean Port certification. This certificate was created in 2008 and acquired a European dimension in 2012. It was officially published in 2024 as an ISO 18725 standard, known as the 'Clean Ports World Standard'.

Certification enables ports to attest to the actions they have taken to limit their impact on the natural environment and the quality of coastal waters. Managers of marinas, whether afloat or dry, must apply to AFNOR, which carries out a certification audit.

Blue Flag' certification is an international environmental label awarded annually to marinas that meet a series of criteria relating to water quality, environmental management, environmental education and safety. Created in 1985 in France by the Teragir association, the Blue Flag is now present in some 50 countries around the world.

The AFBE would like to see **these certifications extended to clean and, in particular, low-carbon engines** (including electric and rechargeable hybrid engines), for port services and user reception.

The AFBE concludes by proposing:
- An extension of the "Clean Ports" and "Pavillon Bleu" criteria on carbon-free engines, both on the port's fleet and the reception of users

E. Upgrading of charging infrastructure in ports

The transition from motorisation to battery electric must be accompanied by the development of charging infrastructure adapted to electric boats in ports in order to facilitate and secure charging and to encourage boaters and professionals to switch to electric. This is certainly the

first condition for the development of electric boats: without recharging infrastructure, users are not encouraged to make the switch.

These infrastructures will have to use the charging standards from the automotive industry to meet safety and handling requirements (Type 2 and Combo CCS standards: ISO 15118 and IEC 62196 - see appendix).

These infrastructures are divided into two categories:

- Slow charging: simple alternating current infrastructures to deliver from 7 to 22kW, with charging intelligence to offer an abundance of facilities.

- Fast charging: heavy DC infrastructure to deliver charging up to 400kW.

As in the road sector, this infrastructure requires heavy investments, some of which can be made by private operators (especially for fast charging), but this is accompanied by investment by the port authorities.

As part of the CEE scheme, the ADVENIR programme extended its support to standard charging solutions, but without any convincing results. These initial initiatives probably came too soon.

The market is now more mature, national aid to help ports (commercial or yachting) in this transition would accelerate the transition:

- **50% aid for the installation of infrastructure by financing electricity connection works (up to the point of delivery)**
- **50% aid for the retrofit of electrical installations with a view to the adoption of Type 2 and Combo CCS standards.**

This aid could be financed under the Advenir programme.

As a reminder, EWC sheet TRA-EQ-124 does not allow installation aid for recharging 100% electrically propelled boats and ships. Work should be carried out on this form to meet the need for powerful recharging of more than 1 MW.

The AFBE concludes by proposing:
- aid to finance the electricity connection of charging infrastructure
- support for the retrofit of current installations for the adoption of charging standards

F. Boats of less than 4,5kW

Low-power combustion engines are often less sophisticated than their larger counterparts; They have a less clean combustion and a greater production of pollutants (in terms of

emissions to air or water) and with poor efficiency (low load and under-use). They are generally less finely adjusted.

Electric motors of equivalent power do not present significant additional costs. They are easy to use, the removable batteries are easy to recharge, and are very light maintenance.

It appears that the use of small combustion engines is still being developed due to a lack of knowledge of the advantages of electric motors.

The AFBE proposes to ban the marketing of fossil fuel combustion engines with a power of less than 4.5 kW by 2030.

The French nautical industry is ready to meet the needs of the market with several brands offering low-power electric motors.

The AFBE concludes by proposing:

- The ban on the marketing of combustion engines with a power of less than 4.5kW by 2030

G. Pleasure craft under 15m in length

As with the car industry, the river pleasure craft sector is finding it difficult to commit to battery electrics, even though the technology is perfectly ripe for this type of craft, requiring little power and therefore little on-board energy, with the possibility of regular recharging.

The AFBE is proposing a ban on the marketing of pleasure craft under 15m in length powered by fossil-fuelled internal combustion engines by 2040.

The French industry is also ready to meet the needs of the market, with several brands offering products that meet these requirements.

In conclusion, the AFBE proposes:

- A ban on the marketing of fossil-fuelled pleasure craft under 15 metres in length by 2040.

III. European cooperation:

A. Creation of restricted traffic zones

Following the example of what has been done in the automotive industry, the creation of restricted traffic zones in the heart of urban centres subject to major air pollution on the one hand, and in the vicinity and in protected natural areas on the other, would encourage States to increase regulations aimed at restricting navigation to "emission-free" boats only in these areas to be protected. Some ports have already applied this principle, such as in the Cinque Terre in Italy (Mediterranean).

This would take the form of a gradual restriction of this type of boat in France at the level of Low Emission Zones (LEZs), particularly on rivers and streams in large cities, where old vehicles are already starting to be banned from circulation.

This regulatory change will also make it possible to protect natural sites by harmonising navigation rules. Such measures could preserve biodiversity in the aquatic environments of these natural areas, in particular in lakes (closed environments).

These regulations will encourage the use of electric or hybrid boats (use in electric mode compulsory) by offering the advantage of being able to navigate in these restricted areas.

The AFBE concludes by proposing:

- The creation of restricted traffic zones (natural or urban areas) where the operation of combustion engines would be prohibited

The application of these principles could be inspired, for example, by the Calanques National Park. The Park's board of directors sets the entry of new ships to ensure that at least 25% of the total energy used is renewable and that 50% of the propulsion is decarbonized. Upon deliberation of the Council, an advisory commission is composed of representatives of the DIRM (Interregional Directorate of the Mediterranean Sea); a representative of the port authorities (Marseille and department); one member of the DGITM; a professor specializing in thermodynamics; local shipowners. Shipowners must therefore offer passenger maritime transport vessels with 50% carbon-free propulsion. This commission does not have a binding mechanism, but simply incentives, such as calls for projects for funding of up to 20% for any new project.

This is a virtuous circle that has already convinced several shipowners to switch to electric. **The AFBE would like this type of system to be replicated in both natural and urban spaces. The AFBE tends to support this objective, which promotes the development of the electric boat market.**

B. Harmonised standards:

The AFBE wishes to work with the European institutions in order to promote and impose the Type 2 (AC alternating current) and Combo CCS (DC current for battery voltages above 150V) charging standards, the references of which are: IEC 62196 and ISO 15118.

This will strengthen the relevance of electric motorisation by providing a solution for continuity of use through safe and reliable fast charging, in harmony throughout Europe.

When the MCS (Mega Charging System) standard under development is sufficiently developed, it will also be able to be used for charging up to 3.5MW.

The AFBE concludes by proposing:
- Promotion, or even the imposition of charging standards from the automotive sector

C. European Support Fund:

With a view to better coordination between the players in the sector, the AFBE proposes the creation of a European fund to support the development of electric or hybrid boats. This fund would be intended to finance boat electrification projects, in particular professional boats such as pilots, tugboats, moorings, coastal freight transport, offshore workboats.

The AFBE concludes by proposing:
- The creation of a European support fund for the energy transition in the maritime sector

Conclusion:

The promotion of electric boats in France and Europe is a crucial issue for the ecological transition of the maritime sector. The proposed regulatory changes, combined with close cooperation with European partners, will create an enabling environment for the development and adoption of electric boats, contributing to the preservation of our marine ecosystems and the fight against climate change.

Priority	**Actions on taxation**	Ref note
1	**Transfer of the TICPE exemption** - Gradual abolition of the TICPE for naval activities, except fishing, aquaculture and freight - For fishing, aquaculture and freight, reimbursement maintained over 3 years in the event of a change of engine	I. C
2	**Electricity tax exemption** For fishing, aquaculture and freight	I. D
3	**Over-depreciation**: Extension of the over-depreciation scheme by 5 years (end of 2029)	I. A
4	**Annual Marine Pleasure Craft Charge** Consideration of carbon-free engines in the calculation of the tax	I. E
5	**Personal Tax Credit** 200€ for the integrated batteries, 25% of the cost of the battery otherwise	I. B
6	**Setting up a one-stop shop to simplify procedures**	I. F
7	**Launch of an AMI on bi-directional charging** Accompanied by a 200k€ grant	I. G
8	**VAT reduction to 10% for electric boat rentals**	I. H

Priority	Public policy actions	Ref note
1	**Support for training in the sector (construction and shipowners)**	II.A
2	**Conversion of utility fleets** 25% in 2027, 50% in 2035, 100% in 2040	II.B
3	**Drafting of the implementing decrees concerning the 1% in the ports** With the introduction of the charging socket standard	II.C
4	**Extension of the "Clean Ports" and "Pavillon Bleu" criteria to clean motorization** Service boats and conditions for welcoming users	II.D
5	**Aid for the investment of standardised charging infrastructure in ports**	II.E
6	**Ban on the use of fossil-fuelled engines in pleasure craft under 15m in length by 2040.**	II.G
7	**Make battery-electric compulsory for boats of less than 4kW by 2030**	II.F

Priority	European cooperation actions	Ref note
1	**Creation of restricted traffic zones (natural or urban areas)**	III.A
2	**Promotion or even imposition of charging standards from the automotive sector**	III.B
3	**Creation of a European fund to support the energy transition in the maritime sector**	III.C

Appendix: Automotive technologies applied to waterways

A. Technical progress thanks to the road locomotive

The progress made in the automotive sector benefited boating and shipbuilding, particularly in two major areas:

- Battery technologies, in terms of chemistry and management system, as well as in terms of safety (especially for Li-Ion batteries)
- Charging solutions, including fast charging, that stem from advances in battery life.

B. Introduction of the Combo CCS charging standard

Boat electrical connections have been around for many years, but are based on "industrial" type connections, with dry contacts and no associated intelligence. These connections require electrical accreditations, complex handling, protocols and instructions that are complex to be respected, especially when the high power is to be delivered.

Faced with these same difficulties, the automotive industry has taken advantage of the means at its disposal to develop a connection standard, particularly adapted and intelligent, allowing a simple connection without prior training, and ensuring safe charging.

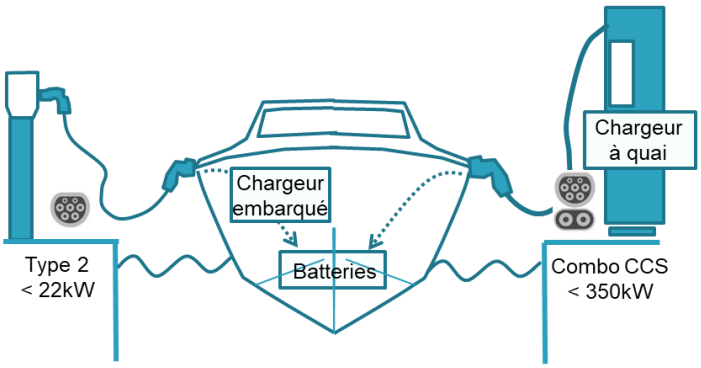
This Combo CCS (Combined Charging System) standard has been standardised under the references IEC 62196 and ISO 15118.

In particular, thanks to two pins (PP and CP) of the socket, it ensures communication between the battery and the charging infrastructure, making it possible to automate connection procedures.

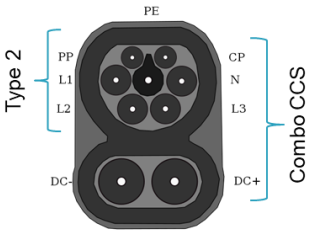
Une technologie éprouvée, sûre, fiable et simple d'utilisation

IEC 62196 ISO 15-118

Recharge courant alternatif (AC) Recharge courant continu (DC)



Prise bateau combinant
Type 2 AC/DC Combo CCS
IEC 62196



On the other hand, this standard allows direct current charging (DC+ and DC-), by installing the chargers at the quayside: saving space, weight saving and cost savings for the electric boat.