# INTERNAL PRICE ON C02e

A financial mechanism for transition in the marine industry

# Internal carbon pricing

When businesses apply a voluntary cost of carbon within their own operations

The price must be high enough to encourage behaviour change

Such internal carbon prices are increasingly being used and are seen as key levers for change – in 2017, according to CDP, nearly 1,400 companies (including over 100 of the global Fortune 500) had adopted, or were planning to adopt internal carbon pricing within the next 2 years. Ref.

# Why is this important?

The key point is to align with Paris agreement that requires all nations to reduce GHG emissions by 45% by 2030, and be Net Zero by 2050*

To achieve this business as usual is no longer an option, but business economics must play a central role this transition

While government play a central role in setting policy on carbon emissions, the free market and businesses have the power to make this happen.

This includes the ability of organizations to taking a leadership role.

Simply put: The transition to Net Zero can only happen by matching good business sense, with sensible policy supported by financial mechanisms

* *This is likely to become 2045 post COP26*

## Case Study: Unilever's internal carbon price

Unilever has been using internal carbon prices since 2016, with the price rising from €30 to €50 per tonne $CO_2e$ in the past 4 years. Unilever initially used a shadow pricing scheme (wherein the costs of emissions are tracked but not actually charged to the business), however failed to see change as their energy costs were relatively low compared to capital costs. The company now 'charges' its business units a notional carbon tax by deducting the cost of emissions from each unit's annual capital budgets.

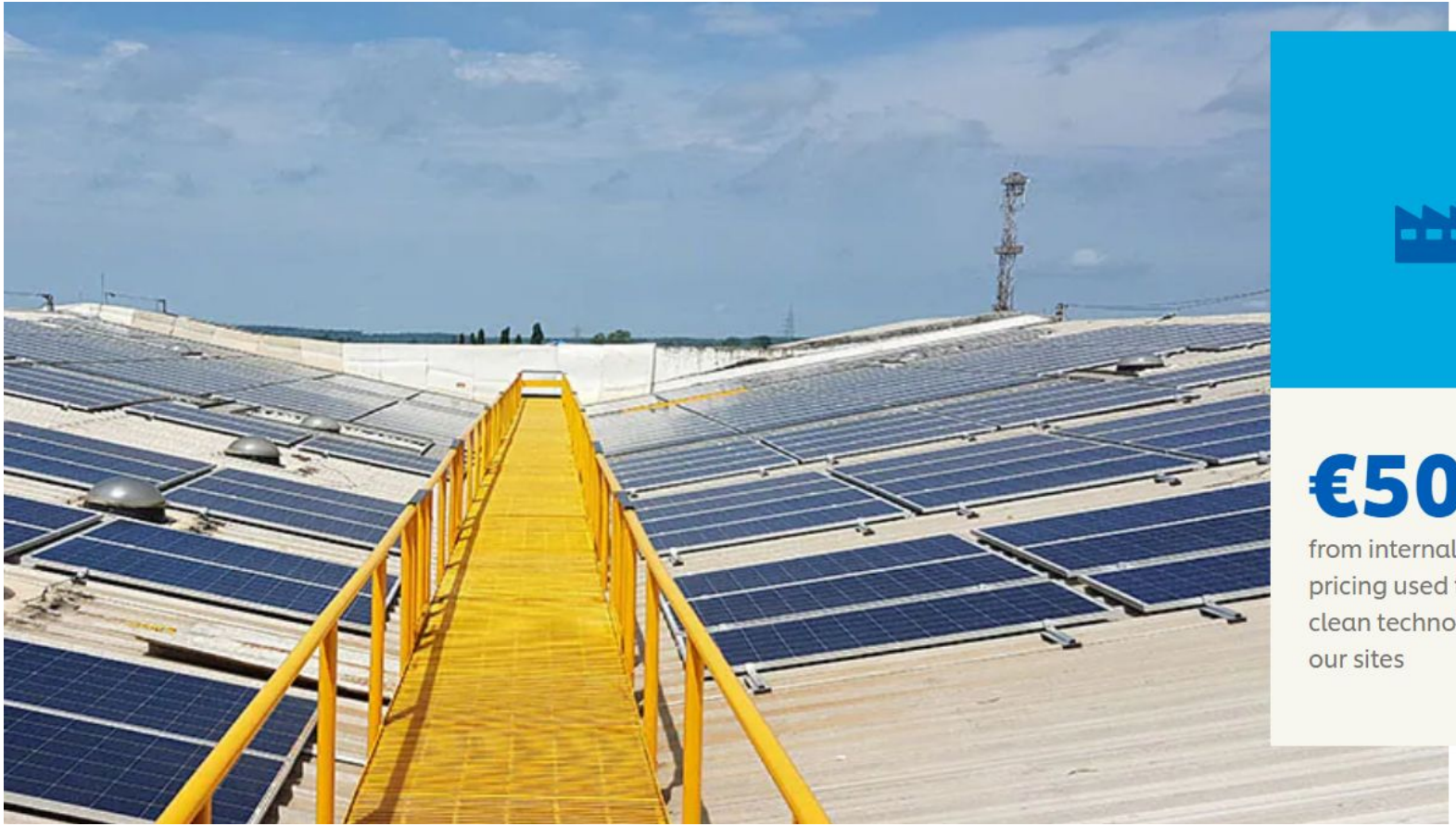
The internal 'tax' is based on the unit's scope 1 and 2 emissions for the previous year and the companywide internal carbon price. Proceeds contribute to a Clean Technology Fund to support on-site renewables, waste reduction, and energy and water-saving projects. They estimate that the internal carbon tax has so far contributed ~€120 Million to the fund, and prevented 1,500 $tCO_2e$[18].

One of the company's subsidiaries, Ben & Jerry's, has used a different approach. Ben & Jerry's has attached an internal price of carbon to every tonne of emissions in the value chain, including emissions associated with agricultural raw materials and end of life treatment for products, since 2015. The funds generated by this internal fee are primarily used to help partner farmers reduce their carbon footprints.[19]

Ben & Jerry's

Unilever

Note: Either a typo, or something very wrong E120 million fund, prevents only 1500 tC02e!!!



**€50m**

from internal carbon pricing used to fund clean technologies at our sites

As Unilever CEO Paul Polman says: "Carbon pricing – while not an end in itself – is an essential tool to support our transition to a sustainable economy. Those who fail to get on board now risk losing out on what I believe will be the greatest growth opportunity the world has ever known."

# What is Unilever doing?

Since aligning with the UN Global Compact's Business Leadership Criteria on Carbon Pricing, we have been using a shadow pricing approach: evaluating business cases for capital projects over €1 million, both with and without a price on carbon, and providing that information to decision makers.

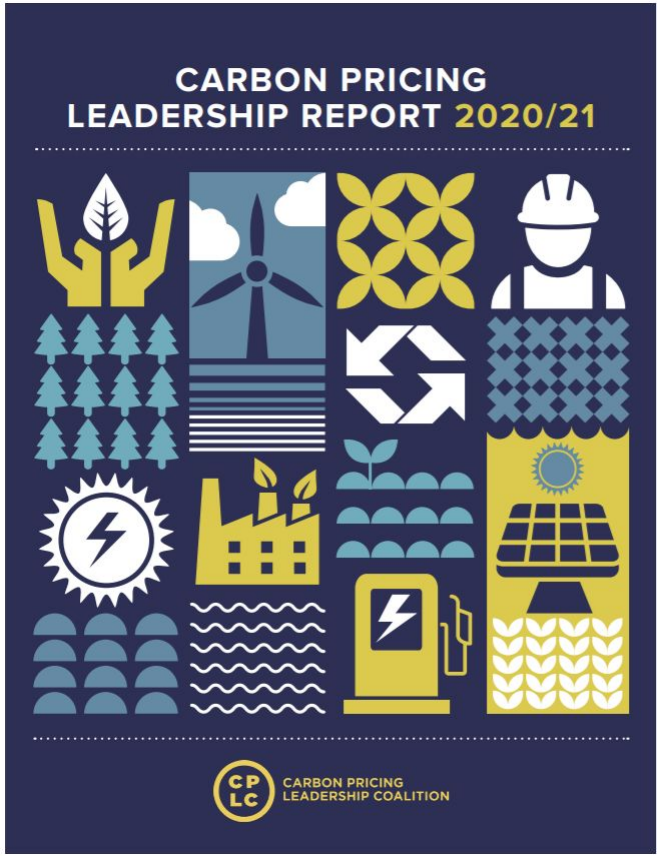
In 2016, we went a step further. We began internally pricing the emissions from our manufacturing operations and subtracting that from the capital budgets allocated to each business division at the start of the year. That money instead goes into a fund – worth about €50 million a year now – which we use to install clean technologies at our sites. The divisions can bid for projects that meet our emissions-reducing criteria and the best projects get the go-ahead.

Aside from the benefits mentioned above, there has been an unintended consequence: by getting teams to run exercises, they uncover new technology they weren't previously aware of. For example, a new type of biomass boiler or advanced refrigeration technology.

Our Ben & Jerry's business has taken a different approach. Since 2015, It has set an internal fee on its carbon for every tonne of emissions, from farm to landfill. This generates more than $1 million annually which, in the early stages of its carbon reduction programme, is mainly used to help its farmers develop and implement carbon footprint-reducing strategies. The fee is at a lower price than what Unilever uses, but Ben & Jerry's has extended it across the whole value chain.

# MORE CASE STUDIES - ref.

**Siemens** has implemented internal carbon pricing in its operations in Brazil, the United Kingdom (UK), and the United States. In the UK, it created an investment fund for emissions reduction, initially charging business units £13 per metric ton of carbon dioxide equivalent (CO2e). The price has since been increased to **£31 per metric ton of CO2e,** in line with the 2017 CPLC Report of the High Level Commission on Carbon Prices and in order to **generate more seed money for climate-related projects.**



**Saint-Gobain** In the construction industry, Saint-Gobain's approach to achieving carbon neutrality focuses on research and development, and capital expenditure, with financial decisions supported by internal carbon pricing. "Manufacturing companies have an essential role to provide solutions in solving climate issues, provided that governments support them, especially through carbon pricing. The carbon prices that we have implemented internally are powerful tools," notes Emmanuel Normant, Vice President for Sustainable Development. "**At Saint-Gobain, we have two separate prices: one at €50 per ton for capital expenditure and one at €150 per ton for research and development projects, which allow us to make accurate decisions based on a longer term horizon."**

**BP** Helge Lund, bp's Chairman, believes carbon pricing is an appropriate response to a global challenge. "A well-designed carbon pricing system harnesses the power of the market to incentivize lower-carbon choices," says Lund. "That makes it one of the most powerful and comprehensive tools to reduce carbon emissions. As more countries implement low-carbon policies and carbon pricing systems, we would like for these systems to be connected over time so that carbon pricing becomes a global policy response to a global challenge."

In the Rapid and Net Zero scenarios of its 2020 Energy Outlook, bp includes long-term price assumptions of carbon prices of **$250 per ton by 2050** in developed countries and $175 in emerging economies. bp has also revised its **2030 carbon price assumptions to $100 per ton**, which is factored into its investment decisions. It is in favor of economy-wide carbon pricing schemes.

# UN GLOBAL COMPACT:

**Business Leadership Criteria**

## CARBON PRICING

"Let us make sustainability the most powerful lobby… **Become advocates** for an effective, well-functioning carbon market… We must **place a true value on the cost of carbon** to our economies and our future. I urge you to work with Governments on this issue."

*– Ban Ki-Moon*
*United Nations Secretary-General*

# Business Leadership Criteria on Carbon Pricing

The Business Leadership Criteria on Carbon Pricing comprise three distinct but overlapping dimensions: integrating carbon pricing into long-term strategies and investment decisions, responsible policy advocacy, and communication on progress. All three dimensions of the criteria are aligned with limiting the increase in global mean temperature to 2° C above pre-industrial levels.

**Consistent with the 2° C global target, companies are invited to indicate alignment with the following criteria:**

- Set an **internal carbon price** high enough to materially affect investment decisions to drive down greenhouse gas emissions;
- **Publicly advocate the importance of carbon pricing** through policy mechanisms that take into account country specific economies and policy contexts; and
- **Communicate on progress** over time on the two criteria above in public corporate reports.

**Global momentum is building to putting a price on carbon...**

- Nearly **400 Caring for Climate companies** from **60 countries** call for an urgent creation of "comprehensive, long-term and effective legislative and fiscal frameworks" designed to make markets work for the climate in particular, a stable price for carbon.
- Approximately **50 Governments** and **300 companies** support the *Putting a Price on Carbon* statement led by the World Bank Group pledging to work towards developing and strengthening carbon pricing policies.
- More than **300 investors** with collective assets of over USD 22 trillion have signed the *2014 Global Investor Statement on Climate Change*, which includes a call for stable, reliable and economically meaningful carbon pricing.
- Over **150 companies** signed the Prince of Wales' *Carbon Price Communiqué* making the case for setting a price on CO2 emissions as one of the main building blocks of an effective climate change framework.
- About **60 leading economists** in Australia published an open letter in 2014 with WWF in support of a price and limit on carbon pollution.

# Setting the scene for sailing

INNOVATION is inherent to everything that is done in the performance sailing sector

This capacity has been 100% focused on performance

We now must incentivise and divert part of this capacity for innovation to a sustainable future

An internal price on C02e is a powerful mechanism that can help to create the scale of change that is needed

# Setting the Price

The internal price can be:

- Fee based, with an actual financial transaction for participants based on calculated, estimated or actual emissions
- Virtual, with no monetary transaction, but designed to guide decision making

The price set needs to be accessible, yet to be high enough to influence the change required, and can be established internally or indexed to an external cost, such as a national tarif, or an evaluation on the social cost of carbon.

# What would this look like for the an offshore sailing class?

- Set a price on 1 metric ton C02e, at a rate* that incentivises an internal market within the class for reuse, resale, better design & build, and optimisation of operations

* Current market rates for C02e are extremely low and can be anything between E5-25.ton.
The ‘True value’ of C02e, and one that promotes change is closer to E40-150+ ton

An internal price for C02e should be a function of:

1. What teams can pay
2. What makes change financially beneficial
3. What gives performance advantage
4. As close as possible to the most recent understanding/projection on the True cost of carbon
5. Be adjusted periodically to support progress along the pathway to Net Zero

- A quick assessment (2021) would suggest the internal price for C02e be at least E40-100.ton , starting on the lower end with bi-annual increases to match what is needed to reach Paris agreement targets

# Continued...

- Establish benchmark for a typical team inventory
  - Boat and components
  - Annual operations
  - Participation in major events
  - Partner operations
  - EOL
- Set a GHG threshold within the rule for certain key boat & components, annual operations and partner hospitality
- Reused components are footprint zero
- Require teams with new builds/components to pay per ton.C02e on LCA benchmark of C02e
- Require teams to pay annual payment for operational benchmark footprint
- Offer teams/partners to opportunity to join NET ZERO, and by calculate and take responsibility for hospitality events
- Allow teams to try to beat all benchmarks by better design/building and operational efficiencies, and justified by verified GHG calcs, and certified LCA
- Where teams do the ‘extra mile’ and bespoke calculations it allows them to optimise performance/cost and impacts, but also provides new updated benchmarks for the class

# The effect

By setting an internal price for C02e, an offshore sailing class will:

Big picture

- Create a culture of climate responsibility within the class
- Facilitate alignment for members and teams to Paris agreement
- Play a leadership role within the industry and stay ahead/ and play a role in future national and regional industry legislation/policy

Internal C02e market

- Create a C02e market mechanism within the class
- Incentivising better operations, economies of scale, and the Race to Net Zero
- Incentivise innovation and technologies with design & build
- Accentuate the focus on longevity of materials
- Promote reuse, and used parts
- And extended lifespan of boats and components
- Place the primary responsibility on teams with budget building new, and much lighter responsibility on teams reusing old components and boats

# Continued - The effect

Net Zero

- Provide a pathway to Net Zero for class members, including
- Reductions, and pragmatic actions such as rCF, better materials, renewable energy standards, etc - targeting 45% reductions by 2030
- Triple bottom line, and community services
- Compensation projects at scale that combine relevant projects including certified offsets and insetting (internal projects)
- A Class that is completely Net Zero - within a short, relevant period of time

# Theoretical Case study: Class Thresholds & Team builds

CLASS sets threshold & generic calc for new builds based on previous best benchmark + margin 10% = 600tC02e

CLASS sets annual operation & event threshold at 200tC02e

CLASS sets target threshold for hospitality 10% included in annual operations, and offers Net Zero service for larger footprints

CLASS sets internal price on C02e = E50

Team A builds new boat, including specialised design & build optimisation, and bespoke LCA resulting in the certified impact 500tC02e (100 tC02e less than generic class figure and threshold)

Team A moulds included above = 150tC02e

Team B builds new boat, doesn't have funds for bespoke work, uses generic CLASS LCA figure ( 600tC02e), but use old Team A moulds (600-150=450tC02e)

Team C buys old boat from Team A, reuse results in impact zero, but build new foils LCA (impact 50 tC02e)

# Continued - Teams

Team A - Contributes E25,000 to CLASS Net Zero fund (E5000 less than if they had just done a generic build and no bespoke LCA)

Team A - Leases Hull and deck moulds (Impact 150 tC02e) to Team B, at market rate which, includes a Euro.C02e value recovering (50% 150*50 = E3750)

Team A - Sells old boat to Team C, at market rate, which, includes the Euro.C02e value recovering (50% 600*50 = E15,000)

Team A - Participate in the full season, but host significant partner events beyond the CLASS threshold, additional GHG calculated 40tC02e

Team B - Having built a new boat, using CLASS generic build calc, but with old moulds, contributes E22,500 to CLASS Net Zero fund

Team B - Participate in the full season

Team C - Having bought an old boat, zero impact, but built new foils (50 tC02e) contribute E2500 to CLASS Net Zero fund

Team C - Enter one event only, and provided certified GHG calculations of operations (25tC02e)

# Continued - CLASS Net Zero fund

**IMOCA Net Zero fund - Receipts year X**

| | |
|---|---|
| ● Team A - New boat | E25,000 |
| ● Team A - Annual operations & events fee | E10,000 |
| ● Team A - Partner hospitality | E2,000 |
| ● Team B - New Boat | E22,500 |
| ● Team B - Annual operations & events | E10,000 |
| ● Team C - New foils | E2,500 |
| ● Team C - One event only | E1,250 |
| Total | E73,250 |
| Represents | 1,465 tC02e |

# Continued - CLASS Net Zero services

**CLASS Net Zero fund provides members with:**

**Reductions/Insetting**
Facilitating 45% reductions as per NET ZERO protocol

| | |
|---|---|
| ● LCA services | E20,000 |
| ● rCF recycling service partnership for teams and industry | VIK? |

**Triple bottom line/community services**
Beyond C02e & NET POSITIVE

| | |
|---|---|
| ● Example - Mm mitigation research and material (E5000.team) | E15,000 |

*

**Offsetting**
Achieving NET ZERO for class

| | |
|---|---|
| ● Support local Marine protected area and Blue carbon seagrass meadows conserving and sequestering 1500 tC02e @E25.ton | E37,500 |

| | |
|---|---|
| Total | E72,500 |

# Conclusion: These pages represent a very cursory first look at how an Internal price on carbon could play a central role to the transition to Net Zero for a sailing class.

The assumptions are based on current benchmarks, and can be considered a fair representation for an offshore racing class.

CLASS Net Zero fund: The choice of E50.tC02e for just three boats, is certainly at the bottom end in terms of what the price of carbon should be, by scaling up to a more realistic 25+ boats/members, along with an increasing price of C02e over time, the bottom line certainly indicates this financial mechanism can be both healthy and provide dynamic services and results on relevant timescales.

CLASS Net Zero services: The choice of services was a blend of minimum required services to support the Case study ( LCA, reduction & Offsetting services) and should form the core of a robust program. The inclusion of Mm mitigation was just an example of an additional community service that could be just as easily replaced with another relevant topic in other years such as: Education, Outreach, VIK partnerships for rCF, renewable RIB services, sustainable sourcing etc.

Care would be needed to ensure that CLASS members dont assume that participation in the fund absolves members of the ongoing responsibility to implement sustainability internally, but this can be addressed by robust CLASS sustainability standards and incentives. Ultimately incentivising sustainability is inherent within the mechanism itself - linking Impacts-Performance-Euro is a powerful tool.

Most importantly this mechanism, places the greatest responsibility on those who have the biggest impacts, and promotes longevity and reuse of equipment, combined these have the greatest potential to reduce our industry's impacts

This internal initial draft is offered by the author alone, to prompt further reflection of the potential of this conceptual mechanism by interested stakeholders.

As such these pages do not reflect recommendations, opinions or any guidance from any other party.

Much more detailed research and consultancy from relevant expertise is needed to assess opportunities and risks not mentioned here, and to guide any future steps.

Damian Foxall
July 2021

## References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https://56ca1e18-db72-4ea6-95e6-60f6da7a41c4.filesusr.com/ugd/653476_bd498f9cc75b451b9a09574c60a1fbbd.pdf


The first and most effective mechanism for governments to enact is a meaningful price on carbon emissions. Carbon pricing is widely recognized to be the most impactful and cost-effective way to decarbonize the economy 76 and is endorsed by every major multilateral institution, including the International Monetary Fund, the UN and the World Bank. Studies suggest that to exert sufficient impact, the price of carbon needs to be set at levels of around $40-80 per tonne, escalating to $50-100 by 2030.77

https://static1.squarespace.com/static/54ff9c5ce4b0a53decccfb4c/t/60ba4a7d2f4d4b6e0ace36c4/1622821505499/CPLC%2BReport%2B2021_Final.pdf

**Shadow Price of Carbon**

As part of project appraisal for all public capital investments, it is essential to avoid expenditure that locks in long-term fossil fuel consumption. To that end, the Public Spending Code will be reformed in 2019 to improve the calculation of a shadow price of carbon. This will result in Government investments valuing carbon at a level which will see the shadow price increase to €32 per tonne by 2020, €100 per tonne by 2030 and €265 by 2050.