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ICEpower Basic Priciples
Towards a sustainable ICEpower

ICEpower Basic Principles

TOWARDS A SUSTAINABLE ICEpower

This document is on The Corporate Social responsibility (CSR) of ICEpower A/S and on The ICEpower Responsibility in Business relationships (RBR).

It describes how ICEpower takes responsibility for contributing, while managing adverse impacts on, internationally agreed principles for sustainable social, environmental, and economic development as well as how ICEpower seek to ensure that our business relationships act responsible.

Our commitment to sustainability is based on the internationally agreed core principles for sustainable development; human rights (including labor rights), environment (including climate), and anti-corruption. The principles are listed by the UN Global Compact and made operational though the UN Guiding Principles on Business and Human rights (UNGPs) and the OECD Guidelines for Multinational Enterprises (OECD).

ICEpower complies with regulations, wherever we operate. Distinct from this, our commitment means that ICEpower, and its subsidiaries, continuously identifies, prevents, or mitigates, our risk of adverse impacts in relation to the core principles. We communicate how we manage such impacts. Where we cause or contribute to adverse impacts, we will provide for access to remedy. We will also seek to make a difference for sustainability, where ICEpower can make a difference.

This means, that ICEpower has implemented and complies to the 2011 Management Standard Process by the UN Guiding Principles (UNGP/OECD) on Business and Human Rights and the OECD guidelines for Multinational Enterprises (OECD).

ICEpower has, created an ICEpower Policy Commitment covering social, environmental, and economic sustainability including our first (2022) social, environmental and economic impact assessment. Our Due Diligence on ICEpower is available on request.

- A Sustainability Policy
- A Business Relationships (RBR) Code of Conduct (CoC)
- A Code of Conduct for Employees (CoC)
- Established operational grievance mechanisms in ICEpower (incl. a whistle-blower system)
- A Three-Year Implementation Plan for Sustainability

ICEpower's Management System meets UNGPs three requirements:

- A Policy Commitment
- A Due Diligence (including Identification, Prevention/Mitigation, Accounting for (tracking – communicating))
- Way of remediation

These processes are in place at ICEpower and ICEpower assumes, expects, and demands the same from all our business relationships (EU Non-financial Reporting Directive – new EU 'Corporate Sustainability Reporting Directive').

Responsibility in Business Relationships

It hereby follows that ICEpower requires all our business relationships (BR) to have adequate policies and processes in place, ensuring that they manage adverse impacts. ICEpower will from time to time check their processes (and latest Impact Assessments) incl.

- Policy Commitment
- Information on handling of severe impacts
- Impact assessment – from where it is produced
- Information on their handling of Business Relationships.

Acc to The Foundational Principle 14, the responsibility applies to all enterprises regardless of their size, sector, operational context, ownership, and structure. The scale and complexity of the means through which our relationships meet that responsibility varies according to these factors and with the severity of our business relationship's adverse human rights impacts.

Our minimum expectations towards our Business Relationships are therefore (and in accordance with the UNGP), that our Business Relationships:

- Include their expectations to their Business Relationships in their Policy Commitment
- Adhere and comply with UNGPs
- Assesses their contribution to adverse impacts (incl. making it available for ICEpower and others)
- Info to ICEpower (and others) on 'known' severe impacts that our Business Relationships cause or contribute to.

ICEpower express our expectations to all our Business Relationships in our Code of Conduct, in this document as well as in other kinds of direct inquiries.

We will assess selected Business Relationship's due diligence processes as well as collaborate with those on proper implementation.

If severe adverse impacts are identified going forward, we see it as our responsibility to use and build leverage, also in cases where ICEpower does not contribute to the impacts. ICEpower needs to ensure that impacts ceases and do not re-occur, (and that victims get access to remedy).

Going forward ICEpower will communicate our expectations to our Business Relationships through our Policy Commitment and Code of Conducts for Business Relationships.

ICEpower acknowledges that the 'business world' is in a transition period and that not all countries and all enterprises yet have understood and been met with local requirements on implementing and adherence to the UNGPs.

Insert the Code of Conduct for Business Relationships (Anders) (Just a button that will link to a pdf file)

Assessing Human Rights, Environment and Economic Impact

Regarding our responsibility for Human Rights, Environment and Economic (Governance) Impact ICEpower complies with the 5 requirements:

1. Approved by Top Management (Board of Directors)
2. Informed by relevant and sufficient human rights expertise (QA)
3. The HuRi expectations are stipulated to all relevant stakeholders (incl. employees and BR)
4. Publicly available at www.icepower.dk
5. Embedded throughout our business

Acc. To Foundational Principle 15 ICEpower has, to meet our responsibility to respect human rights, policies and processes appropriate to our size and circumstances, including:

a) The ICEpower policy commitment is in place.
b) ICEpower has established a human rights due diligence process in which we identify, prevent, mitigate, and account for how we address our impacts on human rights; and
c) A process in which we enable remediation of any adverse human rights impact we cause or to which we contribute. We have not previously tracked and managed human rights / environment / corruption impacts (prior to 2022). Consequently, the first assessment will note all impacts as 'Potential' impacts, notwithstanding the fact that actual impacts may have occurred during the previous years. Actual adverse impacts will be noted for the future.

We have not engaged impacted stakeholders. Sharing our assessments with such stakeholders as part of the process going forward will ensure meaningful engagement.

Similarly, we have not yet applied expectations of responsible business conduct to our business relationships in alignment with the UNGPs. We expect that establishing such practice with time will enable us to better to identify severe impacts that we are merely 'linked to'.

Regarding our first impact assessment, the following overview illustrates ICEpower's first assessment of regarding Human Rights (48 areas), Environment (20 areas), and Economic impact (16 areas):
Insert 3 tables from til file list overview form (green / yellow)

Regarding Human Rights we strongly adhere to the fundamental principle on Human Rights as protecting human beings against discrimination, violence, and hatred involving discrimination. However, and at the same time Human Rights does not stipulate that human beings (minority/majority) have the right not to be offended.

No impact | Potential impact | Actual impact

4 impacts identified on 4 economic areas

1. Accurate Accounting Records and Book-keeping (including keeping financial records of the past five years)	2. Bribes to or Corruption of Public Officials (including both 'active' and 'passive' corruption – also referred to as 'solicitation'; see also 'extortion and blackmail' below)	3. Bribes to or Corruption of Private Counterparts (including both 'active' and 'passive' corruption – also referred to as 'solicitation'; see also 'extortion and blackmail' below)	4. Trading in Influences in Relation to Business Partners, Government Officials or Employees
5. Bribes, Corruption or Trading in Influence Through the Use of Intermediaries	6. Use of Facilitation Payments (unless you are subject to threats or other coercion)	7. Political contributions and sponsorships in expectation of undue advantages	8. Offering or Accepting Gifts Beyond Stated Value (approvals)
9. Permitting or Participating in Money Laundering	10. Hiring Government employees whose jobs create conflict of interest with former job duties of such employees	11. Abstain from Cronyism and Nepotism	12. Clearly define Job Duties based on Skills, Qualifications and Experience
13. Extortion or Blackmail	14. Fraud or Embezzlement	15. Anti-trust and competition	16. Tax Evasion/Aggressive Tax Planning

No impact | Potential impact | Actual impact

4 impacts identified on 4 environmental areas

1. Water Consumption	2. Use of energy	3. Use of Raw Materials - in particular scarce natural resources	4. Use of Chemicals	5. Use of Ozone Depleting Substances or Persistent Organic Pollutants (POPs)
6. Handling and Transportation of Dangerous Substances	7. Emissions to Surface and Groundwater	8. Emission into soil	9. Air Emissions	10. Noise Emissions and Light Emissions
11. Odour Emissions	12. Dust Emissions	13. Preservation of Biodiversity (animals and plants)	14. Animal Welfare	15. Waste Management of Water
16. Waste Management of Solid Waste	17. Waste Management of Hazardous Substances	18. Waste Management of Food Waste	19. New Environmentally Friendly Technologies	20. Diffusion of Environmentally Friendly Technologies

No impact | Potential impact | Actual impact | Severe

19 impacts identified on 13 human rights | 0 severe

1. Right to self-determination (indigenous peoples rights)	2. Right to non-discrimination	3. Right to work (training, contract, termination)	4.a. Right to equal pay for equal work	4.b. Right to a living wage (minimum wage)	4.c. Right to safe and healthy working conditions
4.d. Right to equal opportunities for everyone to be promoted	4.e. Right to rest, leisure, and paid holidays	5. Right to form and join trade unions and the right to strike	6. Right to social security, including social insurance	7.a. Right to protection of mothers before and after childbirth	7.b. Right to children's and young people's protection from exploitation (no child labour)
8.a. Right to adequate food and its fair distribution	8.b. Right to adequate clothing	8.c. Right to adequate housing	8.d. Right to water and sanitation	9. Right to health	10. Right to education
11.a. Right to take part in cultural life	11.b. Right to benefit from scientific progress	11.c. Right to material gains from inventions	11.d. moral rights of authors (protection of copyrights)	12. Right to life	13.a. Right not to be subjected to torture, cruel, inhuman and/or degrading treatment or punishment
13.b. Right to free, prior and informed consent to medical or scientific experimentation	14. Right not to be subjected to slavery, servitude or forced labour	15. Right to liberty and security of person	16. Right of detained persons to humane treatment	17. Right not to be subjected to imprisonment for an inability to fulfil a contract	18. Right to freedom of movement
19. Right of aliens to due process when facing expulsion (seeking asylum)	20. Right to a fair trial	21. Right to be free from retroactive criminal law	22. Right to recognition as a person before the law	23. Right to privacy	24. Right to freedom of thought, conscience and religion
25.a. Right to freedom of opinion	25.b. Right to freedom of expression	25.c. Right to freedom of information	26.a. Right to freedom from war propaganda	26.b. Right to freedom from incitement of racial, religious or national hatred	27. Right to freedom of peaceful assembly
28. Right to freedom of association	29. Right to protection of the family and the right to marry	30. Right to protection of the child and right to acquire a nationality	31. Right to participate in public affairs	32. Right to equality before the law, equal protection of the law and rights of non-discrimination	33. Rights of minorities (culture, religious practice and language)

Environment

ICEpower A/S was in the beginning of this century one of the first companies in the world to make efficient amplifiers and make these amplifiers available for the entire audio industry.
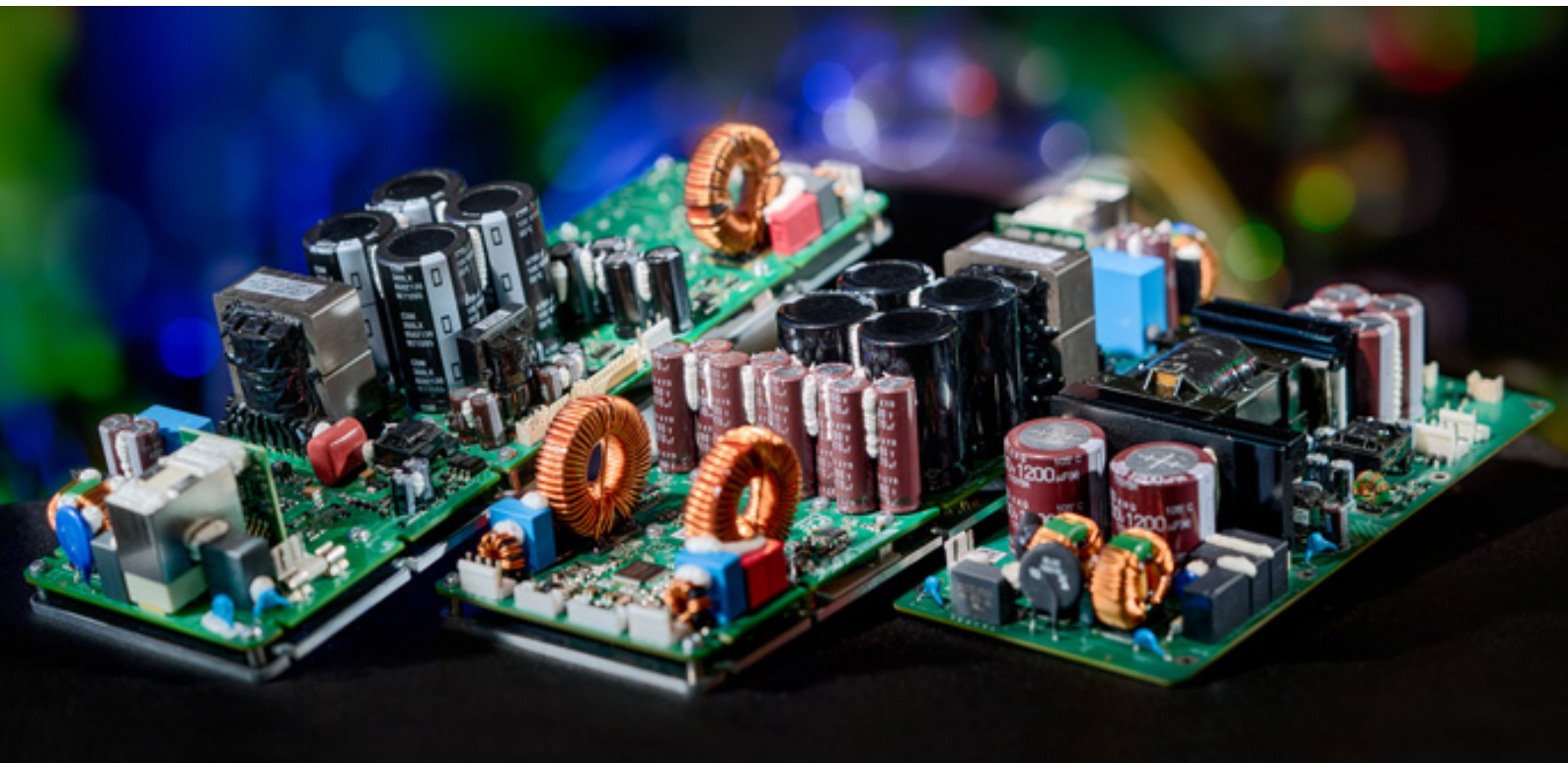
Class D amps are often mistakenly referred to as digital amplifiers because this approach to decimated waveform reproduction bears a great deal of similarity to the way sampled digital audio is stored and reproduced. Essentially it uses a very fast series of rectangular pulses to represent the amplitude and timing characteristics of the waveform instead of simply amplifying the original waveform signal shape intact.

This modulation, ideally, occurs at a much higher frequency than is audible, and a low pass filter is employed to restore the original waveform and keep the switching noise of this modulation out of the audible band.

The primary benefit to this method is efficiency – 85-90% operating efficiencies are common and ICEpower creates efficiency > 90%. And because higher efficiency means less thermal loss, simpler and smaller heatsinks can be employed, which dramatically cuts down on weight. In theory, there are no technological limits on how close to 100% efficiency a Class D amplifier can get – it is basically tradeoffs in relation to performance and cost.

On the other hand, legacy Class B, Class AB & Class A amplifiers have a fundamental limit of 78,5% efficiency – and only theoretically achieved at maximum output power. In a normal use case, these amplifiers operate at an efficiency well below 25%.

In its sense the very idea behind Class D amplification and switch mode power supply technology and the idea by ICEpower has been and is - while producing ultimate quality sound experiences in a variety of audio products – to

• Get rid of the heat (avoiding costly, bulky cooling systems) by reaching best-in-class efficiency while maintaining best-in-class audio performance with our proprietary Class D Technology thereby reducing the power consumption in a home or a professional environment

• ICEpower is the only non-semiconductor company having developed our own Class D technology in silicon, e. g. microchips. This enables ICEpower:

• To make the smallest and lightest weight amplifiers and power supplies thereby reducing the costs of transportation and use of energy to transport

• To greatly reduce the number of components needed to manufacture an amplification board – compared to our peers. Again, less use of components means lightweight, less use of natural resources and less energy consumption at all steps in the supply and value chain.

Although Class D technology can be said to have contributed to more sustainability, we consider this evolution for granted today – state of the art. The audio industry still omits CO2 when manufacturing audio products and especially in use cases by humans no matter whether the use is only idle or playing.

The ICEpower CO2 Footprint

ICEpower has estimated its CO2 emission footprint based on the Greenhouse Gas Protocol (GHGP). ICEpower has established reduction targets based on the Science-Based Targets initiative (SBTi).
Based on ICEpower 2019 we have estimated a total of 22.469-ton CO2-emissions.
Scope 1 is estimated at app. 0,02% CO2 emission. Scope 2 at app. 0,2% CO2 emissions and thus Scope 3 at app. > 99% of total CO2-emissions.

Reducing The ICEpower CO2 Footprint, Scope 1 and 2
As a Small / Medium sized company ICEpower obliges to a yearly reporting on Scope 1 and 2 emissions according to the Science-Based Target initiative settlement.
Fortunately, the Scope 2 emissions (district heating and electricity) will become greener and greener towards 2030 thus estimated at 9 gr CO2/kWh in 2030.

According to the SBTi reductions for SME (Small/Medium Enterprises) ICEpower has defined reduction targets under the 1,5 C (degree) target obliging to 46% absolute reduction in 2030 against 2019.

ICEpower obliges to the procedure for Target Setting Letter for SMEs in 2022 and has established targets (SBTs) accordingly.

Emisssions from diesel use for leased car is kept contant in the projection towards 2030.
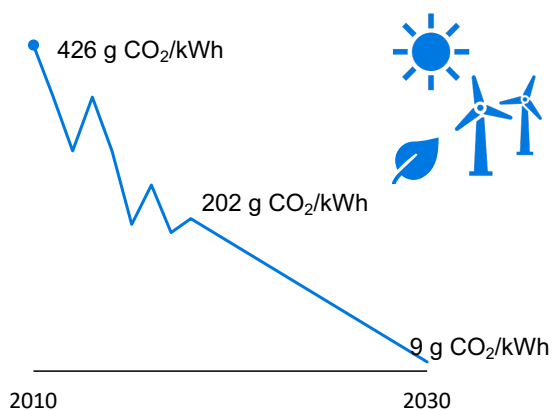
Meaning that Scope 1 emissions is unchanged in 2030.
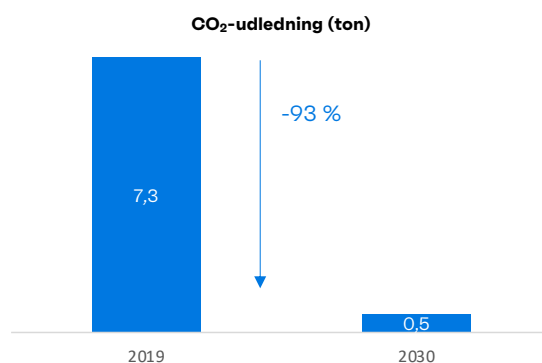
CO$_2$-emission (ton)

4   4

2019   2030
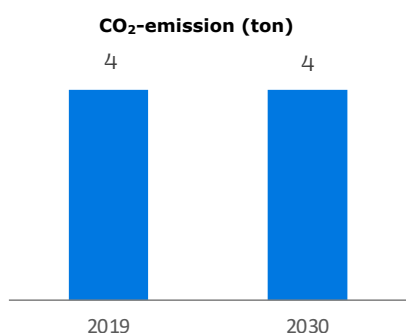
Emissions from district heating drops 37 percent, while electricity drops with 93 percent, sice both district heating and electricity turns greener in 2030.

CO$_2$-emission (ton)

44

-47 %

23

■ Fjernvarme
■ El

2019   2030
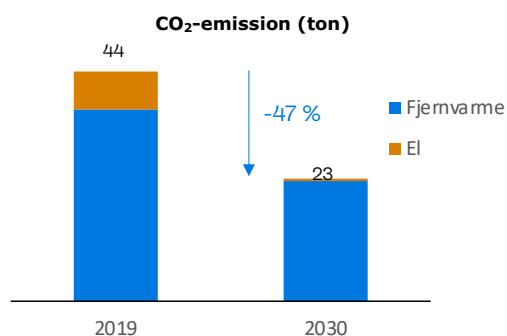
Power turns greener and moves toward 9 g CO$_2$ per. kWh* in 2030.

426 g CO$_2$/kWh

202 g CO$_2$/kWh

9 g CO$_2$/kWh

2010   2030

While electricity consumption will increase towards 2030, the supplied energy will be so relatively greener than in 2019 that emissions will fall by 93% overall.

CO$_2$-udledning (ton)

7,3

-93 %

0,5

2019   2030

Reducing The ICEpower CO2 Footprint, Scope 3
In Scope 3 we distinguish between Upstream CO2-emissions (manufacturing) and Downstream CO2-emissions (use cases among the end-users). End-users are either private users / consumers or professional users (commercial installation or live sound).

ICEpower has calculated that Upstream constitutes app. 12% of our Scope 3 emissions while the sold products (Downstream - use cases) constitutes 88%.
So, by far, the largest CO2-emissions happens as soon as the products are switched on no matter whether we are talking 'play mode' or 'idle mode'.

While ICEpower naturally is growing Y-on-Y, our absolute CO2-emissions are growing simultaneously. ICEpower expects to triple our sales during the coming 3-4 years and thereby generate 3-4 times as much CO2-emissions following our growth (upstream + downstream).

Needless to say, and most importantly, the global world must switch to green energy to solve this vast challenge. Energy must be from renewable sources. Water usage must be environmentally responsible and socially equitable. ICEpower's commitment to sustainability is based on the international agreed core principles for sustainable development; human rights (including labor rights), environment (including climate), and anti-corruption. The principles are listed by the UN Global Compact and made operational through the UN Guiding Principles on Business and Human Right (UNGPs) and the OECD Guidelines for Multinational Enterprises (OECD).

The ICEpower Sustainability Policy is available here.
However, while much of the challenges concerning our environment and climate can be solved by energy from renewable sources; ICEpower is obliged to and feel a strong urge to improve on our Scope 3 emissions right now. In other words, simply waiting for sustainable energy to become available is not responsible.

Product lifetime assessment

ICEpower has +20 years of experience with products in the market. Based on this experience, an average product life of 8 years is assumed. Since most of the CO2 footprint is based on the usage of the product and not the manufacturing the actual CO2 footprint is proportional (more or less) to the lifetime – longer lifetime = more CO2 footprint which is contradictory, since this implies that reduced lifetime reduces CO2 footprint.

This is of course not the case – on the contrary. A short product lifetime would result in even more products manufactured and distributed.

So, all in all, the very long product life cycles that ICEpower makes available for users (often 10-20 years) results in lesser products manufactured, distributed, and scrapped. The build quality and the technology of ICEpower enables state-of-the-art product lifetimes above most similar available audio products.

A Two Step Approach

ICEpower finds that the power consumption of the products can be reduced by:

1. Design - without significant material cost increase
2. Material selection – with a not insignificant cost increase
3. A combination of the above

From April 2022 ICEpower has decided to work with above two / three steps to reduce Scope 3 emissions.

In accordance with the SBTi, SMEs are obliged to measure (screening) and reduce Scope 3 in relative terms.

So, while ICEpower expects a large growth during the coming 3-5 years, we also expect our Scope 3 emissions to grow in absolute numbers.

In relative terms we can improve going forward concerning all new (1) Audio Products (predominantly amplifiers and power supplies) and (2) Turnkey Solutions (predominantly finished goods products for specific, named audio customers) designed, developed and manufactured by ICEpower.

Step 1

As a first step ICEpower has initiated technical design solutions that will impact and reduce power consumption for products in development. The key objective is to balance design effort, cost, and actual reductions. The effort solely driven by ICEpower will need to be neutral toward the customers. This will typically fall into the 1st category – Design.

By design, ICEpower is currently doing the following actions and implementations.

1. Faster transition to standby – going from idle mode to standby mode after only 2min instead of 15min saves 1,5 hour of idle consumption per day
2. Reduced preamp consumption by only powering on active zones – a saving of 7,5W (8zone) or 1,25W per zone in idle mode and m usic mode.

Impact on the baseline consumption based on the above actions:

When new products, where this is the case are being manufactured in 2022 and in the coming years, ICEpower will measure and estimate the results and make the relevant comparisons to measure and make publicly available the relative CO_2 emission improvements according to SBTi.

Further ICEpower currently investigates potential CO_2 emission reductions by improvements concerning:
• Gate drive voltage
• Adjustable PSU rail voltages

Step 2

As second step, ICEpower has decided starting April 2022 to offer all our Turnkey Solution customers a choice up-front in terms of reduced power consumption as an effect of using premium materials (2nd category).

For each specific product ICEpower will initiate a discussion with the specific customer (the product owner) to propose the customer more sustainable product solutions.

These discussions take place during the proposal phase where the concrete product is estimated with alternatives towards power consumption reduction and the related cost hereof.

By selecting state of the art materials, ICEpower can significantly reduce the power consumption.

This comes with a significantly larger cost than the current market asks. So, if ICEpower still wants to be competitive in the segments where ICEpower plays a role, the customer will need to accept a higher product cost – for the benefit of reduced CO2 footprint.

The actual savings is estimated on the actual products. The identified main power consumption contributors are the Power MOSFETS, the Amplifier inductors, and PSU magnetics.

These are also some of the cost drivers for the products produced by ICEpower. We estimate that for a product cost-up in the range of 5% - 20% we can expect power savings of 10% - 35%.

We hope that numerous competitive benefits for our customers can come into play by putting sustainable products into the market.

When new products, where this is the case are being manufactured in 2022 and in the coming years, ICEpower will measure and estimate the results and make the relevant comparisons to measure and make publicly available the relative CO2 emission improvements according to SBTi.

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