



COMBAT CLIMATE CHANGE
A Business Leaders' Initiative

Commit to Combat Climate Change

You already have the strongest weapon





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Climate change is a reality and a huge challenge for the global community. The science spells out both the gravity of the danger and its urgency, and the global community must act now to counter this threat.¹ A delay of 10 years will make any meaningful goal practically unachievable, and the longer we wait, the worse the consequences will be and the greater the cost to society. Today the global recession is dominating politics and business, but climate change is still a pressing issue. Global governance is badly needed to address both.

It is fully possible to stabilize the concentration of greenhouse gases in the atmosphere at the levels needed to avoid the most dangerous impacts of climate change. The abatement potential in the global economy is substantial,² and our conclusion is that we must do as much as possible to reduce and neutralise emissions. The period up to 2030 is crucial – by then we must have reduced today's emissions substantially and created the platform for further reductions. We have to act now.

The cost to society of the transition to a low carbon economy can be restrained to an acceptable level, provided we have a long-term vision. A global framework must strive to maximize opportunities and minimize the costs of the needed changes. The critical point in doing so is how to manage the change needed on a global scale; all the major economies of the world need to take action in a spirit of common understanding³. The present economic crisis provides an opportunity to invest in low-emission solutions, as sidelined capital and labour can be put to work on projects that limit future greenhouse gas emissions.

We, the undersigned business leaders, urge political leaders to establish a clear, politically stable, and predictable long-term cap regime, with burden sharing that considers the differing economic capabilities of nations, future growth and the long-term goal of approaching equity.⁴ Action at the needed scale requires that investments in lowering emissions create value for business. Countries will need to choose their reduction strategies and implement them in national contexts, but an international agreement is needed to create convergence and shared responsibility. Free riders will not be accepted by the world community.

From a business perspective global governance is also needed to:⁵

- Facilitate carbon trade and handle linkage and leakage issues
- Harmonize standards, monitoring, reporting and measurement tools supporting carbon efficiency
- Capture abatement potential from forestry and land-use
- Stimulate development and dissemination of low-carbon and energy-efficient technologies by public support and through public-private partnerships

A forceful post-2012 regime agreed in Copenhagen in December 2009 will be of crucial importance to unlock the abatement potential in the global economy. We, the undersigned business leaders, are committed, based on trustworthy global governance, to shape our investment programs in order to facilitate the transition into a low-emitting future.

¹ See Note on The Climate Threat

² See Note on Reduction Pathways

³ See Note on A Common Understanding of Potential

⁴ See Note on Shared Responsibilities

⁵ See Note on Recommendations from Business



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Commitments of Business Leaders

As a global leader in power and automation technology, **ABB** is committed to helping its customers use energy more efficiently and reduce their environmental impact. We provide solutions for secure, energy-efficient generation, transmission and distribution of electricity, and for increasing productivity in industrial, commercial and utility operations.

We are committed to developing new technologies that meet increasing demands on energy savings and climate efficiency. More than 50% of our research efforts focus on increasing energy efficiency.

ABB has a program to reduce our own energy consumption per manufactured unit by at least 2.5 percent every year. In 2008, the goal was vastly exceeded, with a decline of close to 20 percent.

ABB stands for “Power and productivity for a better world.”

ABB helps customers improve energy and resource efficiency at every step along the chain of energy extraction, transport, processing, conversion, transmission, distribution and end use. Our low-voltage drives alone, just one type of device for controlling electric motors, saved industrial, commercial and utility customers 170 million megawatt-hours of electricity in 2008, equivalent to the consumption of 42 million households in the EU.

Joseph Hogan
CEO
ABB

Citi is committed to both the ongoing reduction of our own GHG emissions, and to advancing financial products and services that support our clients' reduction goals and their development and deployment of climate solutions.

DONG Energy's vision is to produce energy without CO₂-emissions. The first step to reach this target is within the lifespan of one generation to turn the ratio between energy produced by fossil fuels and renewables. Today 85 per cent of the energy we produce is from fossil fuels, while 15 per cent is renewable. In a generation's time these numbers will be 15 per cent from fossil fuels and 85 per cent from renewables.

Anders Eldrup
CEO
DONG Energy

As one of the largest emitters of carbon dioxide in the United States, **Duke Energy** recognizes the special challenge it faces in producing reliable, efficient and affordable electricity for its customers as we anticipate the imminent regulation of U.S. greenhouse gas emissions. Duke Energy is committed to:



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1. Leading our industry in working with the U.S. Congress and the Obama Administration to pass comprehensive greenhouse gas regulations.
2. Creating the option to build new zero-carbon emitting nuclear facilities.
3. Piloting high efficiency coal technologies with carbon capture and storage.
4. A tenfold increase in our renewable energy portfolio by 2010.
5. Establishing industry-leading energy efficiency programs in each of the five states where we are retail providers of electricity.

James E. Rogers
Chairman, President and CEO
Duke Energy Corporation

As a leader in the power sector, **Enel** feels a special responsibility to contribute with technological solutions to the struggle against climate change. We are constantly enhancing the energy efficiency of our power plants and grids and have large investment plans on low- and carbon-free technologies. In our view a global price for carbon set by market-based mechanism as well as clear, stable and long-term regulatory frameworks are essential to accelerate the adoption of technologies and practices to reduce emissions.

Fulvio Conti
CEO
Enel spa

E.ON has committed to cutting its carbon intensity by 50% by 2030. By then it aims to have an energy mix in which more than 50% of the energy is CO₂ free. To achieve this, E.ON will invest 8 bn. € alone in renewables between 2007 and 2011. At the same time, E.ON believes that all available technologies have to be used in an intelligent manner to combat climate change while not risking security of supply and affordability.

Wulf H. Bernotat
CEO
E.ON AG.

Fortum has defined its future role as follows: an enabler of a low-carbon society, a provider of sustainable energy solutions and a respected corporate citizen. We have strict CO₂-targets for our production aiming at ultimately becoming a CO₂-free energy company. These visions can only be realized if there is a global climate agreement.

Tapio Kuula
President & CEO
Fortum Oyj

Iberdrola, a global leader in wind energy and one of the cleanest energy companies in the world, supports the energy industry being called upon to play a fundamental role in the battle against climate change. The company strongly believes in the importance of establishing a raft of ambitious targets to help reduce emissions, and developing mechanisms to help states adapt to climate change. Iberdrola is committed to forging a shared and lasting regulatory framework to encourage green investments.



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Ignacio SÁNCHEZ GALÁN
Chairman of the Board & CEO of Iberdrola

Norske Skog has committed to reduce our greenhouse gas emissions by 25 % by 2020 compared to our emissions in 2006. We have integrated climate change as a key part of our business strategy.

Christian Rynning-Tønnesen
President and CEO
Norske Skog

PNM Resources supports the global effort to reduce the emissions of greenhouse gases and believes the US must provide a leadership role in this effort. We are committed to strong energy efficiency measures and programs as well as the production of electricity from no and low-carbon resources, including wind, solar, biomass, next generation nuclear and coal with carbon capture and sequestration. PNM Resources was an early corporate endorser of mandatory carbon regulation in the US and has worked with US policymakers and other stakeholders to promote enactment of climate legislation, individually, as a member of 3C and as a founding member of the US Climate Action Partnership.

SAS have a goal for -20% CO₂ in 2020 and foresee a possibility to be able to fly with zero emissions in 2050. Aviation needs technology improvement and a drop-in alternative fuel in the future.

Mats Jansson
CEO
SAS

Siemens is a world leader in climate and environmental protection. Our environmental portfolio is the biggest and broadest worldwide, and in fiscal 2008, revenue from our green products and solutions amounted to €19 billion – about one quarter of our total revenue.

Our environmental portfolio comprises renewable energy technologies as well as solutions that reduce emissions and improve energy efficiency in all stages of the energy conversion chain, from power generation and transmission to energy consumption in buildings, lighting, transportation and industry.

In 2008, our products and solutions enabled customers to lower CO₂ emissions by 148 million tons; that's equivalent to the combined emissions of London, New York, and Hong Kong. All our calculations and the methodology used to validate our environmental portfolio have been independently reviewed and approved by PricewaterhouseCoopers. We are committed to reducing our own carbon footprint by 20 percent relative to revenue from 2006 to 2011.

Peter Löscher
President and CEO
Siemens



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StatoilHydro's ambition is to remain an industry leader in terms of having a low climate impact in each of the activities in which we are engaged. While producing energy, we stay committed to addressing climate issues. For us this represents both a challenge and an opportunity for technological innovation and value creation.

Ms. Trude Sundset
Vice President, Environment and Climate
StatoilHydro

For generations **Thomson Reuters** has led the transformation of what were formerly paper-based information businesses to electronic publishing, with the concomitant reduction in impact on our forests and fossil fuel reserves. We recognize, however, that our large data centers, and to a lesser extent our many offices around the world, are significant consumers of power and cooling, and we are committed to limiting their impacts through the use of state of the art green technologies. Our journalists continue to raise awareness of environmental news via our dedicated Green Business channel on reuters.com.

Thomas Glocer
CEO
Thomson Reuters

Vattenfall's vision is to become climate neutral by 2050. We work with three types of low-emitting production: renewable energy, low-emitting fossil energy, and nuclear power. Our vision can only be realized if the company, its customers, and society move in the same direction.

Lars G. Josefsson
President and CEO
Vattenfall AB

The Volvo Group is to be ranked as a leader in terms of Environmental care. Therefore we will:

- Continue to decrease environmental impact from our products, e.g. by providing products that operate on renewable fuels
- Improve fuel savings from a Volvo Truck by 15 % by 2020 compared to 2005 and continue to develop hybrid solutions for further improved fuel-efficiency.
- Decrease CO2 emissions from our own road transportation of goods in Europe by 50% by 2020 compared to 2006
- Continue to make our production facilities CO2 neutral with the long-term ambition to make all our production plants CO2 neutral.

Jan-Eric Sundgren
Senior Vice President
Public & Environmental Affairs
The Volvo Group



Note 1: The Climate Threat

Beyond the natural variations in the global climate, an effect coupled to the increased concentration of greenhouse gases in the atmosphere is identifiable. According to the Fourth Assessment Report from the Intergovernmental Panel on Climate Change, this has already led the global mean temperature to increase by 0.74 degrees Celsius in relation to pre-industrial times. The report's central scenarios describe the further temperature increases should this concentration continue to increase – as is almost certain to occur. These central scenarios include best estimates of further temperature rises from 1.8 to 4 degrees Celsius, leading to a number of serious impacts.

Two degrees may be a critical level for these impacts, particularly freshwater shortages, decreased food production, and the spread of disease. Over time heavily populated coastal areas would be threatened by sea level rise.

The IPCC's FAR reports that even if it were possible to fix greenhouse gas concentration at the level of year 2000 – which would require emissions close to zero and hence a complete shutdown of all emitting sources – global mean temperature would rise by 0.8-1.4°C compared to pre-industrial level by the end of the 21st century. Addressing climate change will therefore require both a mitigation and an adaptation strategy to deal with the unavoidable impacts. The focus of these recommendations is mitigation, where business will have a central role to play, however the 3C Initiative recognizes the central importance of adaptation strategies to dealing with climate change. Preventative action could anticipate potential impacts and minimise threat to ecosystems, human health, the global economy and infrastructure. Although more specific information on the costs of adaptation is needed, preventative and resilience-building action could be cheaper than reactive strategies, both from a humanitarian as well as economic perspective.

Note 2: Reduction Pathways

Establishing what absolute reductions are needed, and the timetables that must be met, is a fundamentally political decision. We urge politicians to take the analysis from the scientific community seriously, and to establish caps and reduction pathways that can be adjusted as the scientific understanding evolves. Though there are a number of different analyses available, and all contain significant uncertainty, the IPCC's Fourth Assessment Report indicates that limiting the total concentration of greenhouse gases in the atmosphere to 450ppm or less will give a reasonable chance of limiting warming to 2 degrees Celsius and avoiding the most dangerous impacts of climate change. To achieve this stabilization level, global emissions will essentially need to peak as soon as possible. Credible studies indicate that global annual emissions in 2020 will need to be stabilized below 45 GT CO₂e, and in 2030 should be lower and trending down. These levels are highly uncertain and also depend somewhat on when the 'peak' can be achieved. It is important to note that this reduction is not sufficient – in achieving it we must create the policy and technological platform for continued reductions to 2050, when emissions should be below 18 GT CO₂e.⁶ By the end of this century, emissions will probably have to be lower than 10 GT CO₂e. Today's emissions are around 45 GT CO₂e.

⁶ A best estimate based on studies by the IPCC, IEA, and McKinsey & Co.

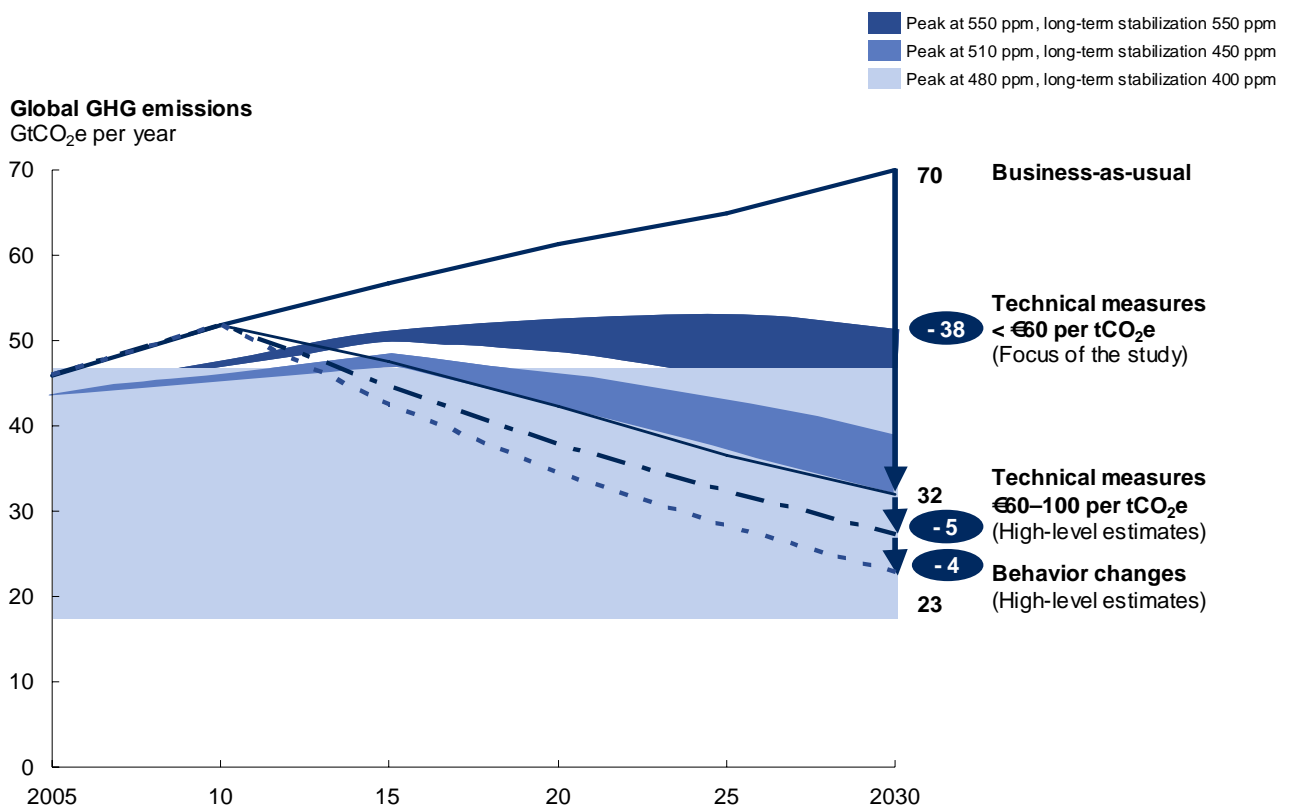


Note 3: A Common Understanding of Potential

Common action must be built on common understanding. Just as the IPCC has given the world a common basis for understanding the problem, a basis for understanding the available means to solve it must be established. The total abatement potential in the global economy should be assessed and tabled in a global standardized inventory that provides a common point of reference. Commitments, actions and policy proposals could be derived from this fact base.

A study by McKinsey & Co, supported by 10 private sector and non-governmental organizations, maps the potential for carbon abatement across the entire global economy. This study shows that it is technically possible and economically feasible to achieve the needed reductions – indeed a significant part of the available measures offer positive economic returns. However capturing the full potential will require strong and sustained policy intervention in the form of price mechanisms, clear efficiency requirements, and investments in new technologies. A realistic chance of success will require actions throughout the entire global economy.

Emissions relative to different GHG concentration pathways



Note: As a reference, 1990 total emissions were 36 Gt CO₂e
Source: Global GHG Abatement Cost Curve v2.0; Houghton; IEA; IPCC; den Elzen; Meinshausen; OECD; US EPA; van Vuuren

To meet the two-degree goal, emissions in 2030 must be halved in comparison to what can be expected in a business-as-usual case. Thereafter emissions must continue to decrease while the economy continues to grow if resources are to be found for ongoing reductions.

Continuing growth is not in conflict with and in fact supports this requirement: an economy in



a negative spiral will have much more difficulty implementing the necessary changes, which are largely dependent on investment.

Note 4: Shared Responsibilities

Most of the world's countries have been party to an international convention (the UNFCCC) addressing the problem of climate change since 1992. Negotiations founded on this convention are in their 15th year, but the effect on carbon emissions has been very limited. Emissions continue to rise and accumulate in the atmosphere; for each year this continues, the eventual restrictions that must be met will tighten.

With recognition of the extremely complex nature of multilateral negotiations and the achievements to date, we believe that the process could be made more effective. From a business perspective, the following points stand out as important in moving the discussion forward:

1. It remains difficult to identify a common agenda, approve a clear prioritization, and address the questions one by one.
2. A lack of institutional capacity to steer negotiations has meant that small and large questions are handled in much the same way.
3. A common view of the challenge and potential ways forward is lacking. Without a shared fact base regarding potential solutions, discussions of how the situation looks tend to dominate. A clearer separation between fact-based analysis and desirable outcomes needs would be beneficial.
4. The historical development of emissions and the question of responsibility cast a long shadow over the discussions, taking the focus away from potential solutions. This is strengthened by use of the reference year 1990. A possible remedy is to address the responsibility question in a dedicated forum, coupled to financing of solutions. This would allow the rest of negotiations to focus on what can be changed, by which policy measures and in which locations.

To be credible, not least in the eyes of business, the process must lead to a cap on emissions that relates to the entire global economy. Weight of responsibility and time frames for action will initially vary between countries, and should take account of the differing opportunities to reduce by industry sectors, but all commitments should be linked to a common goal. Only then will companies and individuals prioritize emissions reductions and assign them the value needed to create solutions.

More extensive commitments to reductions will be taken in national and regional contexts. Clear demonstration of these commitments by wealthier nations is a reasonable expectation for creating global buy-in. Some regions have already taken the initiative, and others are beginning to respond in kind. This dynamic could be captured moving forward by transforming the form of the UNFCCC process from a traditional negotiation to something similar to an international donor conference: '... we see the problem, we understand our responsibility, and we are ready to take the following actions...'



Note 5: Recommendations from Business

On efficiency: The role of efficiency is critical to addressing rising energy demand in a manner consistent with a global focus on reducing greenhouse gas emissions. The benefits of energy efficiency are numerous: avoided emissions, avoided costs of new generation sources, risk management against fuel price volatility, and lower energy costs to name a few. Yet there remain almost as many barriers to widespread deployment of energy efficiency as there are benefits.

National policies will need to

- Stimulate consumer demand for energy-efficient and carbon-efficient alternatives through information, education, and incentives
- Stimulate supply of energy and carbon-efficient alternatives through regulations, codes of practice, and purchasing programmes
- Stimulate financing of carbon-efficient programmes

An international climate regime can contribute meaningfully by supporting institutions for harmonizing the measurement, reporting, and labelling of emissions and energy use; and by establishing measurement methodologies for energy efficiency initiatives and policies that allow for comparability and support financing.

On carbon trade, linkage and leakage: Broadly speaking, a global framework must support the efforts of countries to make extensive and sustained political commitments to emissions reductions. The creation of markets in emissions reductions are particularly useful in this sense, as they engage a broad set of economic stakeholders that value reductions, making it politically difficult to reverse the commitment. By helping national and regional markets link to each other, a global framework can have a multiplier effect on this commitment.

Likewise, by clarifying what measures actors can take to prevent 'leakage' of emissions from more stringent carbon regimes to less stringent ones, a global framework can answer those who would stand in the way of any system that is not watertight from its outset.

Carbon markets are developing in national and regional contexts, but in order to price carbon most effectively, and without distorting global trade, that price will need to be global. While global trade in emission rights will of course take time to emerge, there are important steps that can be taken to support this process by linking markets today. A global framework needs to establish a common goal of a global trade in carbon, and provide practical support for the linking of national and regional markets in the short term. These objectives can be achieved by:

- Giving clear signals about long-term national reduction commitments
- Creating a forum for handling of common concerns between nations with carbon markets, including but not limited to price management/volatility and the generation of credits from offsets.



- Supporting partial or preliminary linkage, both through flexible mechanisms such as CDM and JI and through institutions that allow pilot-scale trading of emission allowances directly. These schemes help establish best practices and relative prices.
- Acknowledging the mutual long-term environmental and economic benefits of fully globalised trade in emissions reductions
- Specifying how compensatory measures can be used to harmonize different regimes without violating other international agreements.

While promoting linkage between markets, the framework will also need to address the risks of carbon 'leakage' – the relocation of emissions sources from an area with a high carbon price (implicit or explicit) to an area with a lower price.

On forestry and land use: While uncertainty in measurement is higher than in other areas, studies suggest that forestry and land-use account for around 20% of global emissions. It has been noted that reducing and/or preventing deforestation and preventing the release of carbon emissions into the atmosphere is the mitigation option with the largest and most immediate carbon stock impact in the short term. A few countries hold the potential to address these emissions and act against deforestation, but because forestry and land use are so tightly coupled to development policy, it is not realistic to expect these countries to act unilaterally for the global good. Additionally, since the economic cost of reducing these emissions is lower than many other alternatives, actors in the rest of the world have incentives to steer resources to measures in forestry and land use where possible. The global framework should support the development of systems and institutions for measurement, monitoring and verification, while facilitating financial transfers through funds and market mechanisms. The long-term goal should be to include forestry and land use-related reductions in a global carbon trading system.

On stimulating new technologies: Combating climate change will require the commercialisation of low-emission technologies in numerous sectors of the economy. Delivering the necessary 'technology push' in time to meet the climate challenge will require a concerted effort from policy makers and industry. Development of know-how and technology is already largely international, and while countries and companies ramp-up their own support for new low-emission technologies in competitive environments they will still have much to gain from collaboration on technological underpinnings.

To increase cooperation on a global scale, it is important to create and implement stable and safe framework conditions for the exchange of knowledge, services and products and solutions. This includes reduction of all kinds of trade barriers for environmentally sound technologies as well as a stable, system for protection of intellectual property rights that enables and enhances technology transfer.

Areas of particular importance include:

1. Energy storage technologies. Breakthroughs here will facilitate low-carbon transport solutions and the more widespread adoption of variable power sources such as solar and wind.
2. Carbon capture and storage. Significant support is needed to demonstrate the technology – through funding, risk management and regulatory frameworks for



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storage. The more consistent these elements are globally, the faster the technology will be commercialized.

3. Next-generation power – particularly high-potential renewable power sources like solar, ocean energy, and offshore wind, but also 4th generation nuclear power.
4. Next-generation biofuels – production of which needs to be both economic and acceptable from a climate and environment perspective.

A global framework can play a large role in creating financial and institutional arrangements that lead to collaboration and convergence around technology development. An area where convergence may be particularly meaningful is public-private partnerships for development and deployment, as commercial actors require support in managing risk, building trust, and overcoming first mover disadvantages.