



FAGBEVÆGELSENS  
HOVEDORGANISATION

The Danish Trade Union Confederation's  
proposal for a climate action plan

Together we create Danmark  
– together we create green transition





# GREEN TRANSITION TOGETHER

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**Together we create Denmark  
- together we create green transition**

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# Preface

FH is the Danish Trade Union Confederation. Our members represent 1.3m Danish workers: masons, mechanics, electricians, nurses, teachers, gardeners, office workers, factory workers and many others. Occupational groups that have created the society we know today. We have played a key role in the transitions in Danish society over the past centuries - from the introduction of democracy to the development of the welfare state. And we are ready to do so again.

The green transition is next.

## A master plan

This is our proposal for a climate plan for 2030. It is a master plan. We call it a master plan because it comprises all major sectors and because it does not just point to narrow climate initiatives but also to necessary supportive measures: A healthy and safe work environment, worker participation, training and education, skills development and job security.

The plan is also a master plan because it addresses a number of challenges facing society at the same time: We are not just facing the challenge of climate change but also the corona crisis. The crisis calls for major investments in order to increase employment and Danish exports. And it calls for recognition of the needs of the most vulnerable groups in society. Our plan encompasses these things.

The plan thus rests on three principles that have also been indicators for us in previous transitions: Solving challenges faced by society, creating more good jobs and ensuring social justice.

Our members represent

# 1,3 mio.

Danish workers: masons, mechanics, electricians, nurses, teachers, gardeners, office workers, factory workers and many others

## The plan meets our climate targets

The plan meets the 2030 target to cut Denmark's emissions by 70%. This is done through development instead of dismantling. Among other things, we need to invest in development into energy, food products, the circular economy and bioeconomy.

The new solutions will make Denmark an international pioneer country. They can reduce emissions in other countries considerably, thereby contributing further to address the global challenge of climate change beyond our own, national reductions. We are among a number of countries that, with an international outlook, can contribute much more than our limited size and national emissions would otherwise call for.

The development of new solutions does not mean that we put our heads in the sand. On the contrary, we also propose initiatives that will force a transition. This applies, for example, to carbon taxes which should be introduced from 2025, at the latest.



### More good jobs

The green transition can create at least 200,000 full-time equivalents by 2030. In this way, it has an effect on employment which is more than four times that of Fehmarn Belt Fixed Link, which will be Denmark's largest construction project.

The new jobs will be created all over the country. And they will help us move past the corona crisis and beyond.

### Justice in the green transition

The green transition is a journey towards climate neutrality by 2050. Some will experience bumps along the way as job functions disappear or as new skills requirements are introduced. These workers need to know that there are solutions for them. There has to be security on the labour market and good opportunities for training and skills

development. We must avoid a deterioration in living conditions and that ownership and support for the green transition is lost.

Social justice is an aim in itself. However, it is also necessary in order for the green transition to succeed. We cannot protect all job functions, but we can protect the people who fill them. Security - not uncertainty - inspires courage. And we need courage to carry out the transition.

Together, we produce the green transition

Enjoy your reading!

**Lizette Risgaard**

President of FH,  
The Danish Trade Union Confederation



# The challenge of climate change and the roles of workers

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With the Paris Agreement, the EU's burden-sharing agreement and the Danish agreement on a Climate Act, climate politics has moved from the global level to the European level to the national level. Now, it is time for the next step of the climate policy. Delivering on the political goals will move out to the workplaces and into the Danes homes.

Workers will play a key role. They will implement the specific climate initiatives and find further potentials. And they must - in line with employers, students and retirees – make adjustments in their homes and everyday lives.

### The challenge of climate change

The global greenhouse gas emissions are steadily increasing. In 1970, approximately 27bn tonnes of CO<sub>2</sub>e were emitted<sup>1</sup>. In 2017, these emissions had doubled. And even though the corona crisis will lead to a temporary decline this year, the development is expected to continue towards 2030.

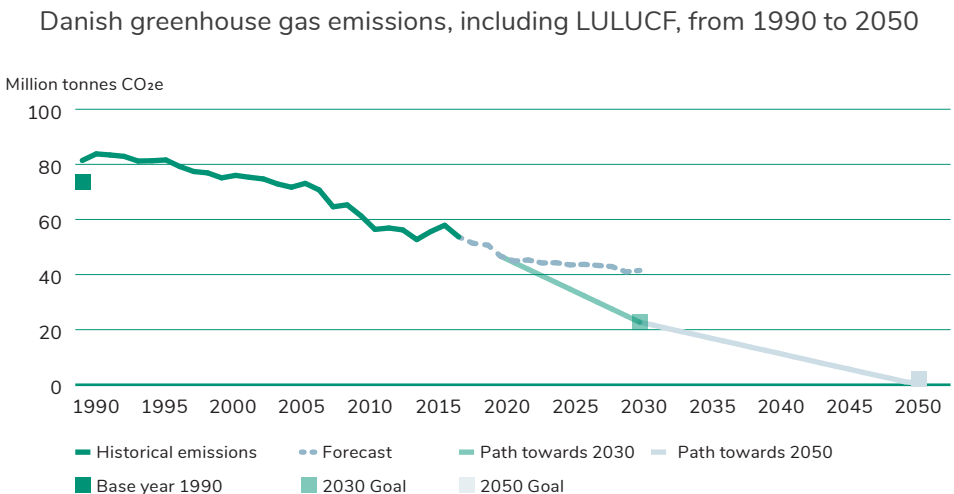
The increased concentration of greenhouse gasses in the atmosphere causes climate change. The UN's climate panel predicts an average temperature rise of up to 5 degrees Celsius by 2100 if the development continues at the current rate.

In Denmark, we have already had a taste of one of the possible direct consequences:

Extreme weather where drought is followed by flooding, which entails economic costs. In many countries, the consequences are far more serious than in Denmark. And consequences abroad can also affect Denmark indirectly in the form of refugee flows and reduced economic growth.

For these reasons - and because of our historical responsibility and current carbon footprint - Denmark has a strong interest in solving the global challenge of climate change.

**Figure 1: Historical and expected emissions**



**Source:** The Council on Climate Change based on The Danish Energy Agency's Outlook from 2019.

**Note:** Historical emissions have been adjusted for electricity trading due to weather fluctuations. In 1990, a particularly large amount of hydraulic power was imported from Norway and the emissions were therefore artificially low. All emissions are including land use and forestry (LULUCF), including the base year.

<sup>1</sup> CO<sub>2</sub>-equivalents is a term describing different greenhouse gasses, including methane and nitrous oxide, in a common unit.



## The costs of inaction are far greater than the costs of reducing emissions

Climate change and the economic costs it causes can be limited if the global greenhouse gas emissions are reduced markedly. And this makes sense since the costs of inaction by far exceeds the costs of reducing emissions.

### Our climate targets for 2030 and 2050

In 2015, 194 countries adopted the Paris Agreement which contains a long-term goal to hold global average temperature increase well below 2 degrees Celsius and to pursue efforts to limit the temperature increase to 1.5 degrees Celsius. In 2017, the EU's burden-sharing agreement followed, and in December 2019, a large majority in the Danish Parliament agreed that Denmark should adopt an ambitious and binding Climate Act with the goal to reduce greenhouse gas emissions by 70% in 2030 and a long-term goal for climate neutrality by 2050, at the latest.

### The work towards 2030 and 2050

Fortunately, some progress has already been made towards the 2030 and 2050 goals. From 1990 and until 2017, Denmark's greenhouse gas emissions decreased from 75.2m to 51m tonnes CO<sub>2</sub>e, and due to policies that have already been adopted, they are expected to

decrease further to 41.5m tonnes<sup>2</sup> by 2030. We can therefore expect an approximate reduction of 46% in 2030, even in the absence of additional initiatives. A reduction of 24 percentage points thus remains. This corresponds to approximately 19m tonnes CO<sub>2</sub>e, including emissions and removals from lands and forests (LULUCF).

The remaining reductions, however, will be the hardest to achieve. Many low-hanging fruits have already been harvested. For example, we have already reduced a large part of the coal consumption and stopped straw burning. The goal cannot be achieved with one single initiative. On the contrary, it will require many initiatives in many sectors. And we need to look into every aspect – across decades and borders.

In this way, towards 2030, the challenge will grow because we already need to lay the tracks to achieve the long-term goal of climate neutrality in 2050. The buildings that we construct today and the forest we plant will still be there in 2050 and they will either be part of the solution or part of the problem.

The challenge is complicated by the risk of carbon leakage. If companies exposed to competition are regulated too heavily, there is a risk that production is moved abroad, to the detriment of global climate initiatives as well as the Danish economy and employment. Meeting the 2030-target will therefore not be easy.

### Funding requirements and sources

In its report, "Known paths and new tracks for a 70% reduction", the Danish Council on Climate Change has assessed that the "socio-economic cost for Danish society" for achieving the 70% target will, by 2030, reach 15-20bn a year. However, this assessment is based on a narrow focus – on cost

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<sup>2</sup> The Danish Ministry of Climate, Energy and Utilities (2019). "Climate policy report: The report on the climate policy by the Danish Ministry of Climate, Energy and Utilities to the Danish Parliament.



Box 1:

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## FH's work-life survey, 2020

The majority of the figures in this report reflect the outcome of a survey on the views of workers on their working lives and the green transition carried out by Statistics Denmark for FH.

The survey includes replies from a representative sample of 2,790 workers and unemployment benefit claimants between the ages of 18-74. The interviews have been carried out in February and March 2020.

The questions in this report have been answered by 2,579 respondents. 1,489 of the respondents worked in the private sector and 996 worked in the public sector. 252 of the respondents had no further education beyond primary -and lower secondary school, 181 had completed upper secondary school, 864 had completed vocational training 794 had completed short- or medium-cycle higher education and 488 had completed long-cycle higher education.

effectiveness, and it is important to keep in mind that behavioural changes over time can erode revenues from taxes and duties on fossil fuels, among other commodities. Finally, the total financing needs, which in this report are calculated as additional investments and immediate costs<sup>3</sup> that an initiative entails towards 2030 compared to a less climate friendly alternative<sup>4</sup>, will be greater than the socio-economic costs. The Council on Climate Change also points to this. The Climate Partnership for Energy and Utilities alone estimates a need for additional and extra investments amounting to approximately DKK 350m towards 2030.

Importantly however, a large part of the investment will be repaid over time - not just in the form positive effects on climate change

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*A large part of the investments can pay for themselves over time in the form of energy savings and exports.*

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<sup>3</sup> A number of immediate costs are included, among other things a number of operating costs, such as climate-friendly public sector food procurement, climate-friendly slurry- and manure handling and strengthened export efforts.

<sup>4</sup> If an oil heating boiler is to be replaced and the price of a gas furnace is DKK 30,000 while the price of a climate-friendly heat pump is DKK 80,000, the investment of the measure constitutes DKK 50,000.

but also in the form of energy saving and exports. This applies to building renovations and wind power, among others. The financial sector has also declared that it intends to invest DKK 350bn in green loans and investments towards 2030. At the same time, Denmark's Green Future Fund, which was established in 2019 with a capacity of DKK 25bn, and EU funds, would be able to fund a number of initiatives.

Just as there is a need for many different measures in many different sectors, there is a need for different sources of funding. This means that there is a need to look at both public and private opportunities.

Building on this, figure 2 clearly shows that workers find that the task of ensuring the

**Figure 2: Attitudes to the responsibility for ensuring the green transition:**

Who do you believe has the greatest responsibility for ensuring the green transition in Denmark?



- It is a task that should mainly be solved collectively.
- No one has more responsibility than others
- It is a task that should mainly be solved by the individual taking on a greater responsibility
- It is a task that should mainly be solved by the private sector

**Source:** FH's work-life survey 2020

**Note:** 2,579 respondents. The richest 10% indicate the 10th decile in the distribution of disposable income

green transition must be solved collectively and not by the private companies or individuals alone. As many as 61% believe that the task should mainly be solved on a collective basis. The underlying survey and other findings of the report are described in box 1.

### The three roles of workers

To achieve the ambitious goals, we will have to exploit solutions we already know. However, as pointed out by the Council on Climate Change, we will also have to develop new solutions. In both instances, workers play a key role.

Firstly, it will be workers who implement many of the known solutions through their daily work. Wind turbines must be built, charging stations must be installed and buildings must be renovated.

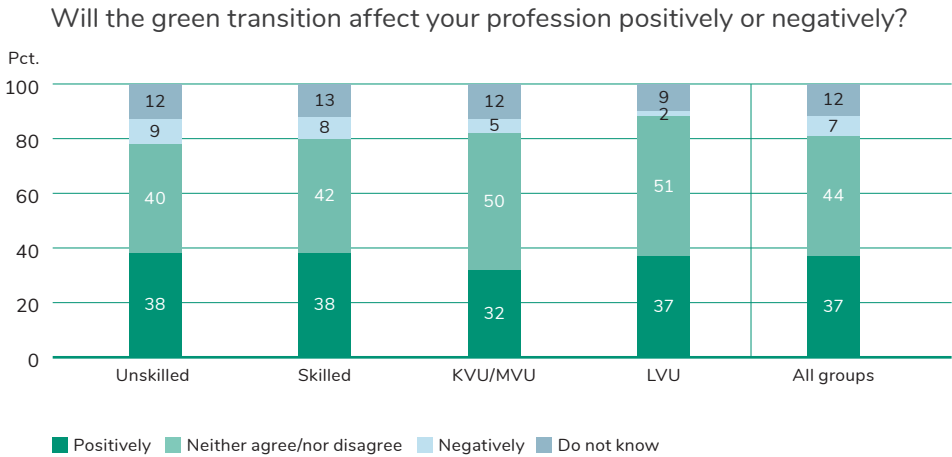
Secondly, workers must be involved in identifying new emissions reduction potentials. Processes must be rethought, business models must be developed, new solutions must be invented and exported to the benefit of the environment, growth and employment.

The implementation and development of solutions will require qualifications. New investments into training and education and skills development will be needed.

Workers trust that the transition will benefit their working lives: Figure 3 shows that 37% expect a positive effect on their occupation while only 7% expect a negative effect. Optimism is therefore more than five times greater than pessimism. To the optimists, the positive expectations are based on trust in better health and safety at work, new green jobs and more meaningful lives, as shown in figure 4. The optimism is only, to a lesser extent, based on expectations for better pay. Only 20% expect better pay.

When it comes to the 7% who expect a negative effect on their occupation, their concern revolves around competitiveness,

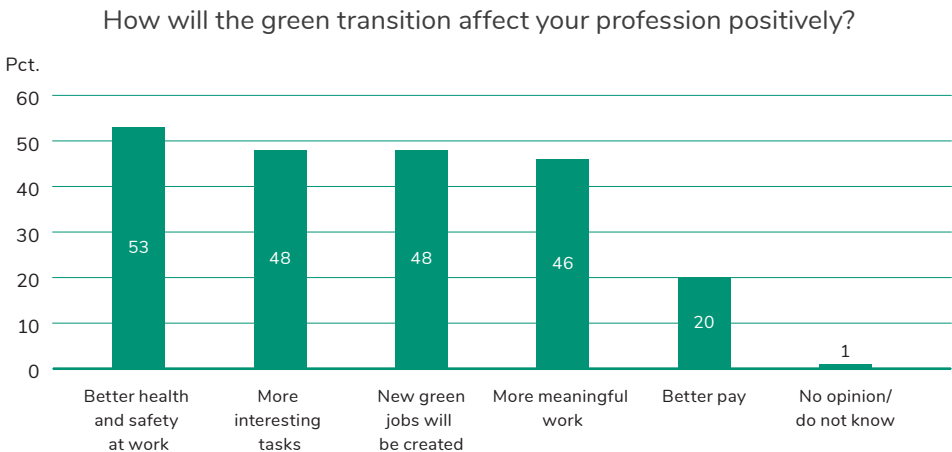
**Figure 3: Expectations for the green transition**



**Source:** FH's work-life survey 2020.

**Note:** 2,579 respondents. Unskilled refers to the highest level of education is primary -and lower secondary school or general upper secondary education. Skilled refers to vocational education. KVU/MVU refers to short- and medium cycle higher education. LVU refers to long-cycle higher education.

**Figure 4: Background to positive expectations**



**Source:** FH's work-life survey 2020.

**Note:** 932 respondents replied "positively" to the question "will the green transition affect your profession positively or negatively?".



## The respondents worry about competitiveness, losing their jobs, job functions and new skills demands

losing their jobs and job functions and new skills demands. This points to the need to ensure that workers are able to change careers and that a social safety net is in place - for example in the form of an unemployment benefit system that provides security when the job situation becomes precarious. Thirdly, workers, as well as employers, must join in the efforts to meet the objectives in their homes

and everyday lives. For example, this can be by replacing the oil heating boiler with a heat pump, by sorting waste and by observing dietary guidelines. Rising to the challenge in daily life and at home may require better funding opportunities. And it may require addressing social and economic inequalities. The relative cost of an oil heating boiler, for example, is higher for low-paid workers than for high earners.

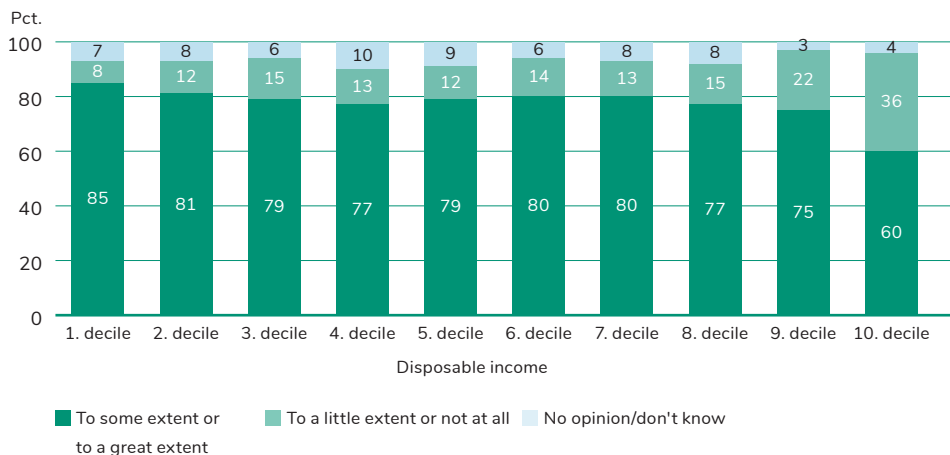
### Social justice and collective solutions

The new everyday tasks and the concern that the transition can lead to job losses, loss of job functions or demand for certain skills give rise to questions regarding social justice.

Figure 5 shows that workers - across income groups - find that it is important that the green transition is socially just. This is in line with the outcome in figure 2 which shows that there are many who believe that the task is to be solved collectively. This belief in the importance of social justice is particularly widespread among low- and middle-income earners but also among high-income earners.

Figure 5: The importance of a socially just transition

To which extent is it important to you that the green transition is socially just?



Source: FH's work-life survey 2020.

Note: 2,579 respondents.

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Workers - across income groups -  
find that it is important that the  
green transition is socially just



# The workers's strategy for the green transition

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The workers support the 2030 target and the ambitious approach to the challenge of climate change. The 2030 and 2050 targets set a course for the Danish climate policy for the next decades, and thereby a large part of our developments in society. The long-term goals provide security for workers, businesses and investors: We know where we are going.

The exact ways to accomplish the 2030 and 2050 targets, however, we have yet to find out. Some have pointed to carbon taxes as an important contribution. Others have pointed to other initiatives. Most recently, the government's 13 climate partnerships have presented a total of 365 recommendations<sup>5</sup>. In order to navigate the many initiatives and find the right path, a strategy is needed.

### **The workers' strategy for the green transition**

It is crucial for workers that the path towards the 2030 and 2050 targets are organised in accordance with the four indicators described in box 2. The indicators are the backbone of the workers' strategy for the green transition. They are an expression of a balanced approach, an international vision and a principle that the transition should not only be green but also just.

### **A balanced approach**

Climate change is perhaps the greatest and most long-term challenge we are facing. However, it is not the only challenge, as we have seen these months with the corona crisis. We have seen this before with the financial crisis. And sometimes there are concerns about other crises. At the same time, we know that many companies and ordinary Danes struggle with challenges in their everyday lives such as stress, insecurity and a restricted budget.

There are some who have talked about other concerns besides the environment as "obstructions" to the transition. We do not share that view. There are other real and important challenges besides the challenge of climate change, and they must not be dismissed. And if the green transition towards 2030 and 2050 is to succeed, society must also withstand other challenges. If not, the balance will be tipped when other crises hits us. The best and most stable solutions will be those that benefit both the environment and address other issues.

### **An international perspective**

Climate initiatives in Denmark can reduce emissions abroad - both through reduced imports of climate-impacting goods such as soy, and through the export of climate-friendly products and technologies.

By developing solutions that can also be used in other countries, we can have an impact that is far greater than what Denmark's size and domestic emissions dictate<sup>6</sup>. We have already shown we can do this with the development of wind turbines. New solutions and exports can also benefit the economy and employment in Denmark. This is necessary. Not least in light of the corona crisis.

In addition to this, because Denmark is an affluent country with relatively high emissions per capita, we have a responsibility to join in solving the global challenge - especially to the benefit of the developing countries that have low historical emissions and are often more vulnerable to climate change.

Meanwhile, it is crucial that Denmark does not tighten the screw so much that production and emission relocate to other countries with more lenient rules, leading to so-called

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<sup>5</sup> In November 2019 the Danish Government established 13 'climate partnerships', primarily constituted by private sector actors, as well as a Green Industry Forum, which includes FH. The partnerships were asked to identify solutions and provide recommendations.

<sup>6</sup> Emissions on Danish soil constitute approximately 0.1% of the total global emissions (the Ministry of Climate, Energy and Utilities' "Climate policy report: The report from the Danish Ministry of Climate, Energy and Utilities to the Danish Parliament on the climate policy", 2019).



“carbon leakage”. In isolation, closures on Danish soil would benefit the Danish 2030 targets since, in accordance with UN rules, these only apply to emissions on Danish territory. However, this would weaken the global climate efforts. And it would weaken the Danish economy and employment. Many companies are exposed to competition, including in the area of industry, transportation and agriculture. Practical solutions that also protect competitiveness must be found for these companies.

When climate initiatives are considered, international effects should therefore be taken into consideration. The trade union movement has already proposed this in connection with a consultation on the Climate Act.

### A just green transition

The ambitious climate initiatives in Denmark must go hand in hand with social justice. FH shares this view with more than three in four workers, see figure 5. Specifically, social justice as part of the green transition means, among other things, that:

- There must be a solid safety net and good opportunities for career changes - especially for those whose jobs and job functions are most vulnerable.
- The climate crisis and the green transition must not increase inequality in Denmark. Workers must not end up footing a

disproportionate share of the bill. On the contrary, the transition must be combined with a rise in living standards.

If the green transition is not perceived as socially just, it risks undermining the long-term support for the climate initiatives among the population. This could lead to politicians raising questions regarding ambitions and direction which would give rise to insecurity among both workers, businesses and investors. This would lengthen the transition and make it more cumbersome and costly.

### A master plan

The following chapters will present a master plan for the green transition which is based on the workers' strategy for the green transition which has been summed up in the indicators in box 2.

We call it a master plan because we think across sectors and challenges. Contrary to the main part of the government's climate partnerships, the plan does not focus only on a single sector but on all sectors - including the public sector. And unlike the recommendations of the Danish Council on Climate Change, the plan does not just contain narrow climate actions but also a number of important preconditions for a successful and cost-efficient transition: Health and safety at work, worker participation, training and education, skills development and job security.

## The trade union movement's four indicators for the green transition

1. Denmark must be a leading country: The green transition of Denmark must contribute to meeting the goals of the Paris Agreement and ensure achievement of the target for the reduction of greenhouse gasses emissions by 70% in 2030 compared to the 1990-level.
2. The green transition must create more good jobs: The green transition must be used as an opportunity to create new, good jobs in Denmark. The transition must advance human and technological potential, including the circular economy. The transition will inevitably entail that some job functions disappear. However, it is crucial that the green transition leads to the creation of new and better jobs. This requires that we, as a society, ensure that Danish workers have the right qualifications for meeting the new requirements. A strong social safety net and investments into training and education, skills development, health and safety at work and new technology are therefore crucial components of the green transition in Denmark.
3. The solution is collective decisions and binding international cooperation: Society must finance the necessary investments into the green transition. The individual can take on a co-responsibility, but it cannot be left to the individual to solve the challenge of climate change. This would lead to an insufficient effort and there is a risk that it would adversely affect the most vulnerable in society. Denmark must be a pioneer country in a way that inspires others to combine the green transition with improving living standards for workers. Achieving Denmark's ambitious goals must never be obtained by exposing Danish companies to a level of regulation that makes production and emissions relocate to other countries with more lenient rules. This would be harmful to the climate at the global level. A solution to the challenge of climate change requires binding international cooperation.
4. The climate crisis and the green transition must not increase inequality in Denmark: There is no doubt that the green transition will entail major costs. However, the alternative - inaction- will entail far greater costs for all of us. The trade union movement will work towards ensuring that the transition becomes socially just.

FH's proposals meet  
the 2030 target and  
create more good jobs

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## 01

Bigger roles and initiatives  
for the public sector

## 02

Strategic commitments to Power-to-X, circular  
economy and bioeconomy, carbon capture and  
storage, and research

## 03

Sector coupling underpinned by  
major energy investments

## 04

More climate-friendly installations,  
structures and buildings

## 05

A more circular economy, better disposal  
and management of waste

## 06

Climate-friendly food-development,  
consumption, agriculture and forestry

## 07

Transportation: Reform of car taxation and  
heavy transport

## 08

Green transition of business and industry

## 09

International initiatives regarding climate,  
competitiveness and exports

## 10

Carbon taxes and other sources of financing

Together, these initiatives  
would deliver the

# 19 m

tonnes CO<sub>2</sub>e-reductions  
allowing us to achieve our  
70% goal by 2030

FH's master plan contains a total of 113 proposals. The first part of the plan proposes 89 specific climate initiatives covering 10 areas - from green and socially sustainable purchasing in the public sector to more offshore wind farms and carbon taxes<sup>7</sup>. Together, these initiatives would deliver the 19m tonnes CO<sub>2</sub>e-reductions, allowing us to achieve our 70% goal by 2030. We assess that the total green transition will create at least 200,000 more full-time equivalents in Denmark.

### Denmark in 2030

If the plan is implemented, Denmark will have met its ambitious climate target and will be an international pioneer country - not just based on greenhouse gas emissions but also in the area of Power-to-X-technologies, circular economy and bioeconomics. The new solutions, such as hydrogen, alternative proteins and climate-friendly materials will contribute to reducing emissions in other countries and exporting them will benefit growth and employment in Denmark. Thanks to a mixture of subsidies and carbon taxes adjusted to the individual sector, our industry and agriculture will be developed, not dismantled.

Denmark will, at the same time, have demonstrated how the transition goes hand in hand with equality and social justice. Citizens will

receive better education, and thereby, better opportunities for contributing actively to the transitions - among other things through a strengthening of worker participation. More people will have green jobs, and for people who are affected because their jobs disappear, there will be greater security and better possibilities for skills development than today. People will continue to choose what they eat themselves, but they will be better informed, and the carbon footprint from food production will have been considerably reduced. There will still be people who drive fossil fuel cars, but there will be 700,000 electric cars on the Danish roads, in addition to hybrid cars.

The state will have driven the technological endeavours by defining "missions" by setting a course for initiatives and cooperation and by providing venture capital. The majority of the investments will be funded by private operators who have seen green potential and a good scope for returns.

The price paid by the Danes will, among other things, be in the form of carbon taxes - for example on air travel - changes in car taxation, mandatory replacement of oil heating boilers and gas furnaces, and inconveniences in connection with waste sorting, expansion of wind turbines, biogas plants and infrastructure. For most people, however, this price will be outweighed by energy savings, more nature, smarter cities, better opportunities for jobs and training, increased labour market security and ownership of the green transition. There will therefore continue to be wide support for the transition and for the next target of climate neutrality by 2050.

### Impact on climate change: The plan accomplishes the 2030 target

Ea Energy Analyses (Ea) has assessed FH's combination of climate initiatives and the impact on climate change of key proposals (other proposals are considered to facilitate the transition but do not have an independent

<sup>7</sup> Go to <https://fho.dk/tekniskbaggrundsnotat> for more information on the proposals.



effect on emissions). The purpose of the assessment was to ensure that the initiatives do not overlap or mutually exclude one another and that their estimated effect on emissions is valid. For some initiatives that involve changes in consumption, part of which the estimated impact on climate change could be outside Denmark, Ea has estimated the national effect to constitute 50%. Some of the initiatives that require a significant amount of research, such as new feed additives in agriculture, are subject to considerable uncertainty. Based on its assessment of the initiatives, and with the above reservations, it is Ea's assessment that the expected impact on climate change, when all initiatives are implemented, constitutes a reduction of approximately 19m tonnes of CO<sub>2</sub>e, in addition to the reductions that are part of Denmark's Energy

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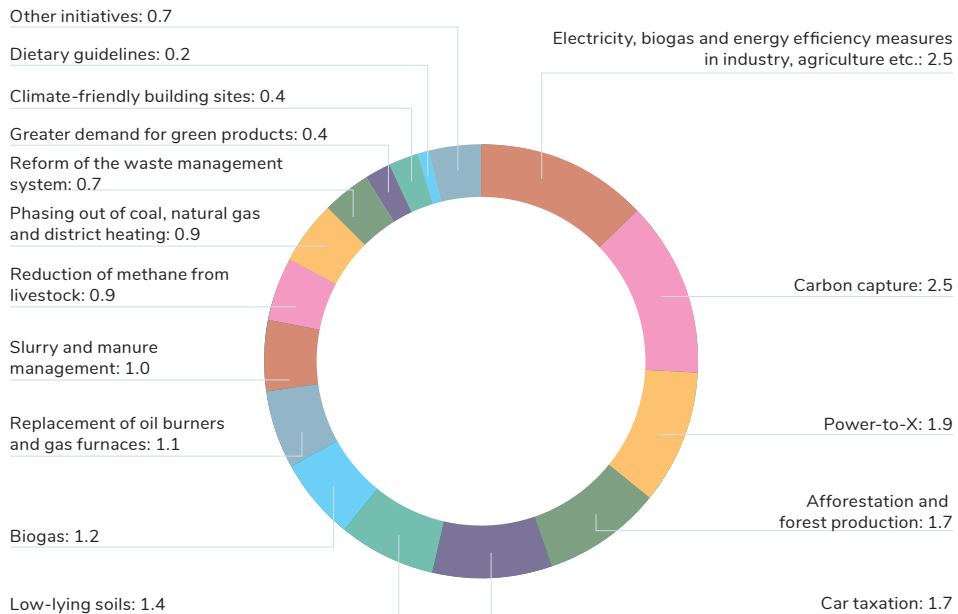
There are many linkages and value chains across sectors and it is therefore often meaningless to ascribe obtained reductions to one sector alone

**Table 1: Impact on climate change, employment impact and financing needs**

	<b>Impact on climate change</b> (mill. tonnes CO <sub>2</sub> e by 2030)	<b>Employment impact</b> (full-time equivalents 2020-2030)	<b>Financing needs</b> (billion DKK.)
1. Public roles and initiatives	Underpin the transition	-	-
2. Strategic efforts	Underpin the transition	1.100	2,4
3. Sector coupling, energy and public utilities	10,2	148.400-207.500	248,2 - 351,7
4. Installations, structures and buildings	0,6	17.700	18,6
5. Circular economy and waste	0,7	-	1,4
6. Food consumption, food and agriculture	5,4	12.100	16,9-22,1
7. Transportation	1,7	-	41,0
8. Industry and trade	0,4	-	0,1
9. International initiatives	Underpin the transition	-	0,2
10. Climate taxes and other sources of financing	Underpin the transition	-	-
<b>Sum</b>	<b>19,0</b>	<b>179.200-238.400</b>	<b>329,0-437,7</b>

Source: The Economic Council of the Labour Movement (AE), Ea Energy Analyses, a number of climate partnerships and FH's own calculations.

**Figure 6: The impact on climate change distributed to selected initiatives (million tonnes CO<sub>2</sub>e)**



**Source:** The Economic Council of the Labour Movement, Ea Energy Analyses, a number of climate partnerships and FH's own calculations. For more information on the initiatives, see the following chapters and [www.fho.dk/tekniskbaggrundsnotat](http://www.fho.dk/tekniskbaggrundsnotat).

and Climate Outlook (DECO19) from the Danish Energy Agency. In this way, a 70% reduction compared to 1990 will be achieved.

Table 1 shows the reduction's distributed to the sectors that are described in the following chapters while figure 6 shows the distribution between specific initiatives. It is important to keep in mind that many of the initiatives are cross-sectoral and are dependent on the other initiatives.

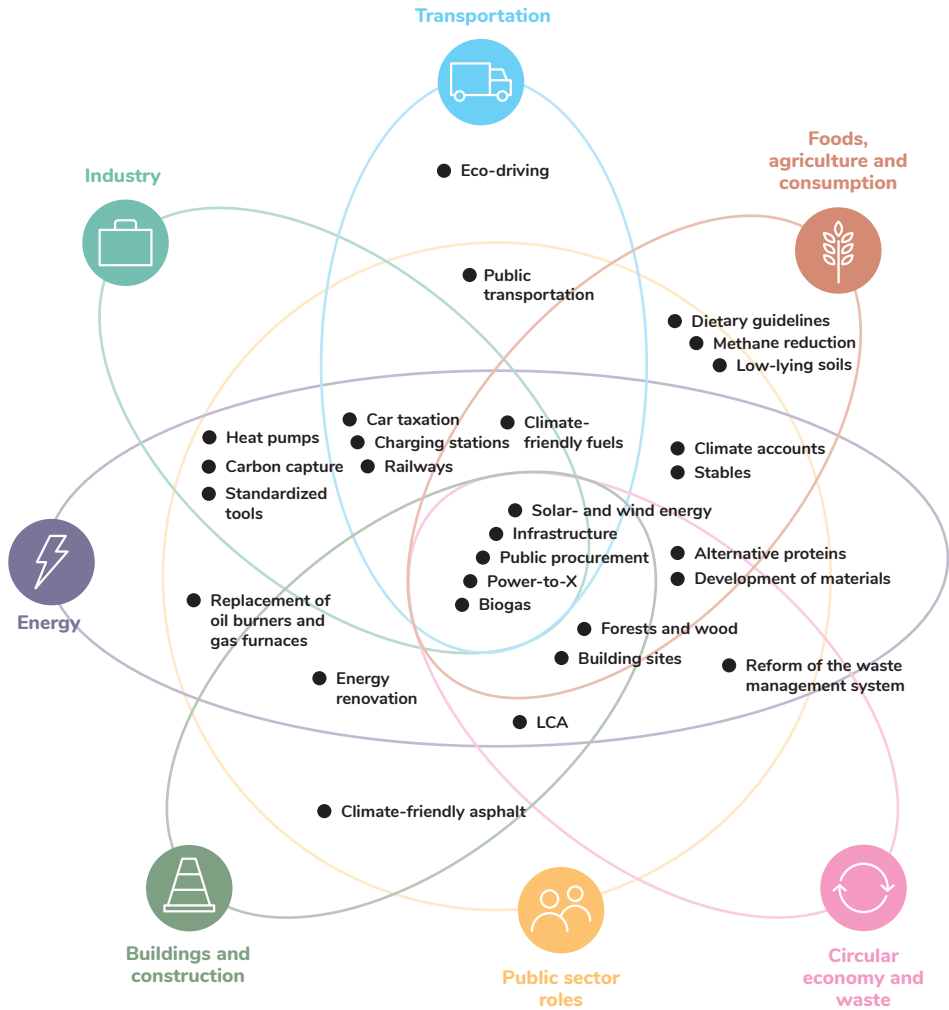
### Sectors, sectoral applications and collective solutions

As shown in table 1 and figure 6, the main part of the reductions are, for the most part, driven by the reductions in the energy sector which is expected to have reduced its emissions by almost 100% in 2030. However, a simplified focus on different sectors and the

relative contribution of certain initiatives is not useful. There are many linkages and value chains across sectors and it is therefore often meaningless to ascribe obtained reductions to just one single sector. For example, the agricultural sector contributes to the production of biogas which replaces fossil fuels in transportation and industry, while requirements for green and socially sustainable public procurement in the public sector drive the implementation and development of solutions in the areas of installations, structures and buildings, transportation and trade. Often, a solution in one sector necessitates an initiative in another sector.

Table 1 and figure 6 therefore do not reflect the cross-cutting value chains and preconditions and therefore not the actual contributions of the sectors. For example, reductions

Figure 7: Illustration of sector coupling and sectoral applications



Source: FH. The figure is illustrative. For more information on the initiatives, see the following chapters and [www.fho.dk/tekniskbaggrundsnotat](http://www.fho.dk/tekniskbaggrundsnotat)

due to an increase in the use of heat pumps, which are attributed to the energy sector in the table, can also be attributed to trade, industry and agriculture.

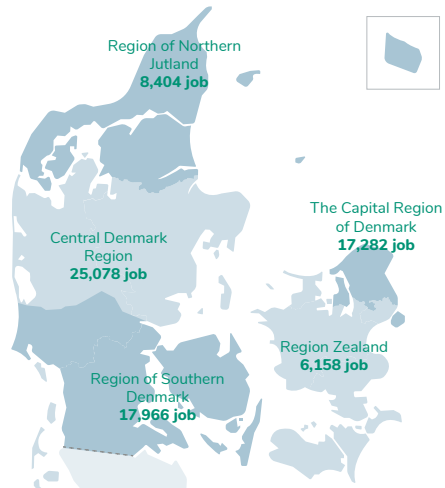
Figure 7 provides a more accurate representation of the individual initiatives and contributions of the sectors. It shows how a number of initiatives intersect with six different sectors as well as the public sector. It can be seen from the centre of the figure that some initiatives play a key role in the transition as they affect all areas. This could be the development of solar- and wind energy, Power-to-X and public procurement. The contributions from these initiatives cannot be ascribed to just one sector. The solutions are collective.

It can also be seen that the public sector - which is another expression of collective solutions - plays a role in almost all of the selected initiatives. That role can be to set the direction, be a coordinator or to be a regulator/investor. At the same time, the state also owns critical infrastructure. These strategic roles for the state, regions and municipalities were, to some extent, overlooked in connection with the government's climate partnerships which did not include a partnership with the public sector. Meanwhile, the roles of the state as a driver for development and transition are recognised to an increasing extent<sup>8</sup>. And in connection with the corona crisis, the state's ability and capacity to shape society has become clearer - perhaps in Denmark more than in any other country.

### Uncertainties and continuous follow-up

The expected reductions and the achievement of the 2030 goal are subject to uncertainties. Firstly, the exact impact on climate change from research and development is uncertain, see above. Secondly, Denmark's emissions - and thereby the need for reductions - depend

**Figure 8:**  
Geographical distribution of green jobs 2018



**Source:** The Danish Business Authority database, table ERSTS501.

**Note:** The figure shows the number of full-time equivalents in green products and services. The figures are for 2018.

on societal developments that are unlikely to be exactly as the climate outlook predicts today. Finally, new cost-efficient and socially just solutions can emerge.

For those reasons, there should be continuous follow-up of the initiatives and the achievement of objectives until 2030. The plan should not be seen as a definitive solution for the entire duration of the period. If it turns out that further initiatives are needed, for example if research into feed additives does not meet the expectations of the climate partnership with the Danish agriculture and food sector, it will make sense to take more organic soils out of production than initially suggested here.

<sup>8</sup> See, for example, Mazzucato, Mariana (2013), "The Entrepreneurial State: debunking public vs. private sector myths", Anthem Press: London, UK.

### Employment: At least 200,000 full-time equivalents

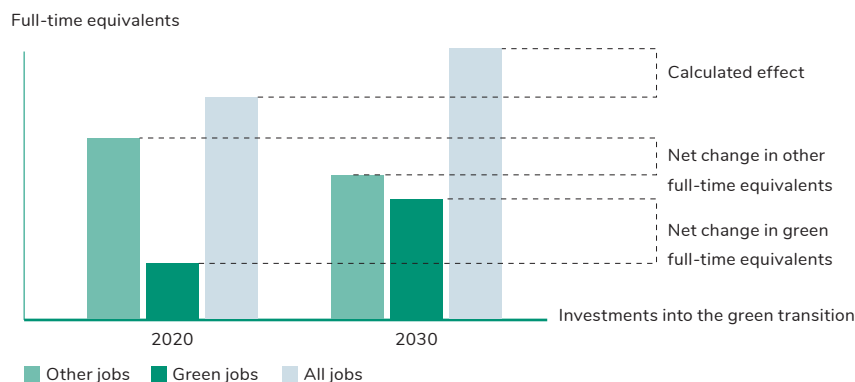
The green transition in Denmark will have significant positive effects on employment. For the initiatives that the Economic Council of the Labour Movement has calculated on behalf of FH alone, at least 200,000 additional full-time equivalents will be created from 2020 to 2030. This exceeds the employment effect of four Fehmarn Belt Fixed Link construction projects according to earlier estimates from Copenhagen Economics<sup>9</sup>. An ambitious 10 GW energy island with the related investments would create a further 150,000 full-time equivalents.

Many of the full-time equivalents will be created in rural areas. This applies to full-time equivalents associated with the expansion of biogas, wind energy and infrastructure. Today, central Jutland and the southern part of Denmark already hold most of the so-called “green” jobs in Denmark, see figure 8. At the same time, the initiatives also create new full-time equivalents in larger cities, for example in connection with energy renovation. This creates a geographical balance in terms of the effects of the plan.



At least 200,000 full-time equivalents will be created from 2020 to 2030. This corresponds to an impact on employment which is more than four times that of the Fehmarn Belt Fixed Link construction project

Figure 9: Illustration of employment impact



Note: The figure is illustrative.

<sup>9</sup> Copenhagen Economics (2013), "Documentation of the economic-wide employment impact of a the Femern Belt tunnel construction", for Femern A/S June 2013).

The impact on employment is a conservative estimate. It only includes the temporary jobs created when establishing the initiatives - for example, the establishment of an offshore wind farm - not the permanent jobs that for some proposals will be rooted in permanent operations and maintenance.

Furthermore, it must be noted that the impact on employment does not reflect the total quantity of “green full-time equivalents” created. The employment effect does not reflect that the initiatives can lead to a decline in other full-time equivalents as a consequence of the shift in investments from traditional to green investments. This is illustrated in figure 9 where the change to the total number of full-time equivalents shown by the impact on employment is smaller than the change in the number of green full-time equivalents. At the same time, it is important to note that not all of the calculated full-time equivalents will be green in the sense that they reduce emissions when considered in isolation. For example, some of them are created in trade or transportation, which are not traditionally considered ‘green’. All the full-time equivalents created, however, contribute to underpinning the green transition.

Figure 9 illustrates that the transition can lead to the loss of some job functions. This is one of the reasons why the plan suggests that proposed legislation and capital investments on climate change should be subject to impact analysis regarding the impact on employment with a view to ensuring active implementation of solutions where they are needed, and

municipal and regional climate strategies must specifically address “just transition”, including solutions for businesses and citizens.

All in all, it can be expected that the 200,000 full-time equivalents estimate is on the low side and that the transition will create even more full-time equivalents towards and beyond 2030. It is important to underline, however, that the estimates are subject to considerable uncertainty.

### **Health and safety at work, training and education, skills development and security on the labour market**

It is not enough for the green transition to create more jobs. It must create more good jobs. At the same time, we must ensure that those who are to fill the new jobs have the right skills and that there will be new opportunities and support for the ones whose job functions disappear. Health and safety at work, training and education, skills development and security are necessary preconditions for the transition.

The final part of the report will outline a total of 24 proposals in these areas.

### **Financing needs**

When it comes to the initiatives for which it has been possible to assess the financing needs, it has been estimated that the total financing need towards 2030 will be approximately DKK 230-450bn. The range listed in table 1 of DKK 390-437.7bn includes the financing of a number of initiatives that have already been agreed in the energy agreement of 2018 and reflects an increase in electricity

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<sup>10</sup> The financing requirements for the energy and utilities sector listed in table 1 at the amount of DKK 329-432.7bn are based on the specifications of the needs for additional investments of the climate partnership in question (Kpenergi, 2020). In this case, it is important to keep two aspects in mind (EA, 2020). Firstly, the need for additional investments contains a number of pre-arranged initiatives that are part of the climate outlook for 2019, including the establishment of three offshore wind farms, the expansion of biogas and infrastructure. These initiatives are included here because they involve a genuine investment need and a real impact on employment towards 2030. Secondly, the climate partnership initiatives deviate from the FH initiatives in a number of areas. Among other things, the climate partnership requires more electricity, among other things due to more low-emission vehicles. On the other hand, FH's initiatives include a number of additional measures such as, for example, more carbon capture and storage. Ea assesses that, based on input from the climate partnerships and FH, the total required additional financing needed constitutes approximately DKK 230bn, not including financing for the agreed measures under the energy agreement, and the immediate costs which are included in the DKK 329-437.7bn in table 1 above.



production which is more than what is required for domestic consumption and which therefore allows exportation of green energy<sup>10</sup>. The financing need does not include costs for continuation of initiatives beyond 2030 etc.

The estimate is - as in any assessment looking 10 years ahead - subject to considerable uncertainty. The cost of the transition will, ultimately, depend on both the politically chosen initiatives, developments in technology, behaviour and initiatives in other countries.

DKK 230-450bn may seem drastic. Many of the investments will, however, provide a return and the main part is therefore expected to be financed by private investors. This applies to, for example, extension of wind energy, infrastructure and investments into the development of Power-to-X and biorefining.

The public sector is expected to provide financing at a maximum amount of DKK 75bn, depending on the co-funding of private investors, grants from the Danish Green Investment Fund and EU funds. Specific FH proposals for financing are listed below.

In addition to providing a financial return, many of the investments will bring socio-economic benefits. For example, energy renovation could contribute to a better indoor climate in schools, and afforestation can contribute to biodiversity and a better aquatic environment. Such positive effects are not included in the investment need but contribute to making the initiatives good investments.

### **FH's plan distinguishes itself from other proposals**

The FH master plan distinguishes itself from other proposals and recommendations presented by other parties. Five characteristics can be highlighted:

1. The proposals as a whole address all major sectors, not just agriculture, energy or transportation, and defines a strategic and active role for the state.

2. FH's proposals do not only address technology but also a number of broader and necessary conditions for meeting the 2030 and 2050 targets: Training and education, health and safety at work, equality and security on the labour market. 24 proposals in these areas are presented in the final part of this report.

3. FH's proposals give priority to development instead of dismantling. For example, investments into Power-to-X, carbon capture, alternative proteins, climate accounts and feed additives must be made rather than actively reducing animal production or banning the sale of petrol cars which lead to carbon leakage, reduced mobility and social imbalance. Out of the total reductions of approximately 19m tonnes of CO<sub>2</sub>e, the above solutions provide 5.4m tonnes, which corresponds to more than 25%.

4. FH's proposals have a greater international focus than that of the Danish Council on Climate Change, for example, as it focuses narrowly on Denmark's national targets. Solutions like Power-to-X, alternative proteins and climate-friendly materials could potentially be exported or extended to other countries and have a global effect. In addition to this, the FH proposal limits carbon leakage by providing subsidies for industry and agriculture and by combining carbon taxes in Denmark with a carbon border tax in the EU.

5. FH's proposals on carbon taxes, foods and car taxation are balanced, reasonable and practical. The solutions are beneficial for the climate but do not create social imbalances, carbon leakages or disproportionate costs for the state. As for carbon taxes, which have been discussed for a long time, FH proposes a specific path forward and deadlines for implementation.

# 01

## Greater roles and measures for the public sector

The public sector plays a key role in the green transition even though it does not, in itself, emit a lot of greenhouse gasses or has been appointed a climate partnership established in its own right. The 2030 target can only be achieved by working across the public and private sectors. And if we are to use the positions of strength of the Danish corporate sector, we also need to use the potential that lies in our state, regions and municipalities.

### Strategic and active roles

Overall, it can be useful to distinguish between three roles of the public sector (see Mazzucato, 2013):

1. State, regions and municipalities can set a strategic direction, for example by setting targets for 2030 or 2050, as the government and a number of municipalities have already done, or by putting forward visions for specific sectors.
2. The state, regions and municipalities must ensure coordination between the different players - among other things by

establishing partnerships - as has already been done in Denmark in the area of climate change.

3. The state, regions and municipalities can create and develop new markets. Firstly, by introducing regulation which creates demand and thereby greater market pull. Secondly, through tenders, investments and subsidies.

In addition to this, the state can have a role to play in connection with ownership of critical infrastructure. This applies to, among others, electricity, district heating and gas infrastructure and also when it comes to data handling.

All of these roles are brought into play in FH's proposal. Firstly, FH proposes strategic commitments to Power-to-X, circular economy and carbon capture. Secondly, the proposal suggests that the state should coordinate players and collect data to underpin energy efficiency measures and intelligent consumption. Thirdly, it is proposed that the state and municipalities introduce regulation and

# FH proposes

1. Green and socially sustainable public procurement
2. Climate-friendly public sector food procurement
3. Preparation of a national smart city strategy
4. Municipalities and regions must develop climate strategies
5. Draft legislation and capital expenditure should be subject to impact analysis of the impact on climate change
6. Draft legislation and capital expenditure in the field of climate change should be subject to impact analysis of the impact on employment and redistribution
7. The expertise and work of the Council on Climate Change should be expanded
8. The state must support and guarantee responsible for data and artificial intelligencekunstig intelligens

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become subject to requirements that create market pull and that they co-finance the above commitments and the development of standardised tools, climate accounts etc.

### **Green procurement, tendering and catering**

In addition to the above proposals that are presented in the next chapters, FH presents a number of proposals that are summarized in box 3. What the majority of these initiatives have in common is that they do not only reduce emissions from a certain source, but that they also fundamentally change the way things are done in a number of sectors. They thereby drive a transition in the proper sense of the term.

One of the most important proposals in this connection is green and socially sustainable public procurement (see figure 7). Public sector procurement amounts to more than DKK 300bn a year and the initiative can therefore make a large difference in the form of demand and market pull for green solutions across sectors. Specifically, a “follow/buy green or explain”-principle should be introduced in the Tender Act, and green public procurement should be underpinned by a central purchasing unit - for example, the National Procurement Ltd. Denmark (Statens og Kommunernes Indkøbsservice) - and the development of a number of tools as described in the other chapters, for example life cycle analyses in construction. The principle must be phased in over a number of years so that suppliers can keep up and to avoid that the public sector pays excessive prices. Finally, a requirement should introduce labour clauses and training and education clauses in the Public Procurement Act so that procurement and tenders are socially sustainable.

The state can also influence the development through the public sector caterers that serve 800,000 meals every day. Here, the skills development, networking and exchange of experience are crucial to making healthy, climate-friendly and sustainable choices. DKK 30 million must be allocated to this scheme from 2020 to 2030.

Public sector procurement  
amounts to more than

# 300 bn

DKK a year

### **Strategies and legislative work**

New strategies and pathways to the legislative work must underpin the transition. A national smart city strategy should be prepared which will optimize energy- and resource consumption in cities and spread intelligent traffic management systems, including through the use of data. The strategy should include experiences from, for example, Realdania, BLOXHUB, C40, utility companies, grid companies and others that work intensely with energy optimization, flexible energy consumption and high-level data processing.

At the same time, all municipalities must have a climate strategy which can set a course at the local level and contribute to create and develop markets for climate-friendly products and services. The strategy must contain specific requirements for reductions in climate impact and guidelines in areas such as purchasing, outsourcing, building and construction works, transportation- and supply companies such as energy, water and waste. At the same time, the plans must specifically address a just transition. This includes solutions for companies and citizens for whom the transition constitutes a challenge - for example if the company has a large carbon footprint or if the demand for its products can be expected to decline in future. Addressing a just transition must be coordinated with the coming guidelines from the EU Commission which has suggested, among others, that a territorial just transition plan must be a precondition for full access to the EU's coming “Just Transition Fund”.



The climate strategies must, as a general rule, be embedded and developed at the local and regional level because municipalities and regions are different and have different possibilities for developing climate change solutions. This can be done by involving citizens, companies and workers. At the same time, there will be a need for coordination between municipalities, among other things to ensure coordination of infrastructure and standards.

Furthermore, legislative proposals and capital expenditure should be subject to impact analysis for their impact on climate change in the field of climate change they should also be subject to impact analysis for employment- and distributive effects. This would be in line with the wording of the Climate Act to ensure social balance and cohesion. At the same time, it will demonstrate where there is a need to resolve challenges facing companies, workers and local communities. It can contribute to a local embedding and support for the green transition towards 2030 and 2050.

In the same vein, the expertise of the Council on Climate Change should be expanded. The green transition is about more than simply greenhouse gases and technologies – it requires a general transition of society since it affects more or less all activities in basically all sectors. The Council on Climate Change should therefore be assigned additional resources, especially in the areas of employment, training and education, industry and a just transition.

Finally, the state must, independently of proposals, support and guarantee responsible use of data and artificial intelligence. Many solutions towards 2030 and 2050 rest on the collection of data on consumption, behaviour etc. The state should take on a coordinating role and ensure that this does not leave a disproportionate share of the bill with the Danes and does not intervene in their everyday lives. It must also ensure that the processing and sharing of these sensitive data on citizens comply with the principles on the right to privacy and the possibility for opting out. A total of, for example, DKK 100m from 2020 to 2030 can be allocated to the development, implementation and operation of specific solutions.

“

*The green transition is about more than greenhouse gases and technology. It entails a transition of society in a wide sense.*

# 02

## Strategic commitments to Power-to-X, the circular economy & bioeconomics, carbon capture & storage and research

The public and the state, in particular, can guide the social development by identifying a number of key challenges and define the “missions” to solve them. In 1961, John F. Kennedy formulated the Apollo mission by saying that, before the end of the decade, the US would “put a man on the moon” (Mazzucato, 2013). Similarly, the Danish government has referred to the 2030-target as a moon landing.

Missions that aim to solve challenges facing society will, typically, require the development of new technology and solutions. It is important to focus on both the supply- and demand side, i.e. both research and development and the creation of a market. The Danish state has

already created a strong green wind turbine industry that way. Now, it must do something similar in new areas.

FH proposes the definition of three national, strategic “missions” which can gather different players to find solutions to challenges. It can be based on the experiences with gathering players for the government’s climate partnerships and the Green Industry Forum on how to meet the 2030 target.

### **The storage and use of green electricity: Power-to-X**

The climate action programme must contain a strategic mission on the development and

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<sup>11</sup> Power-to-X covers different technologies that can convert generated electricity to hydrogen or ammonia and enable the use of the electricity in other sectors (for example heavy industry, trucking, airplanes or over periods of time (storage)).



# FH proposes

9. National strategy for Power-to-X: “Before 2030, it must be possible to use green electricity across sectors and over time”
10. National strategy for carbon capture: “Carbon capture should be a cost-efficient instrument in Denmark before 2030”
11. National strategy for bioeconomy: “It must be possible to use biomass for conversion to high-value products before 2030”
12. Master plan for green research and innovation

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scaling up of Power-to-X<sup>11</sup>, for example with the following wording:

“By 2030, Denmark must be able to convert, store and use green electricity”.

With this venture, Denmark will take advantage of the fact that we, in the North and Baltic Seas, have some of Europe's best wind resources, positions of strength in the wind turbine field, biogas and a strong electricity grid with good connections abroad<sup>12</sup>.

A first step will be to prepare a strategy for Power-to-X, which can be based on Energinet's action programme, and underpin it with specific initiatives, including the development and scaling of solutions as well as extending the energy production and infrastructure. The initiatives that will be described in the next chapter entail a significant financing need. However, they also carry great potential for mobilising private investments, exports, employment and global reductions towards 2030 and 2050.

### **Cost-efficient carbon capture and storage**

Despite widespread electrification etc., there will still be emissions to address in 2030, among other things from waste incineration. Part of the solution should be carbon capture with a view to storage in the subsoil (CCS, "carbon capture and storage") or subsequent use in connection with, for example, Power-to-X and new materials (CCU, "carbon capture and utilization"). The potential for carbon capture is great in view of the 2030 and 2050 targets. Among others, CCS is one of the ways in which the CO<sub>2</sub> content in the atmosphere could actively be reduced, which may become necessary if the global emissions are not reduced quickly enough in the coming years. At the same time, Denmark may have good opportunities for underground storage.

However, the CCS/CCU technology is not sufficiently mature to realise its full potential and there is also a great deal of uncertainty concerning its costs. On that basis, a mission should be formulated with the intention of making carbon capture a cost-efficient instrument in Denmark before 2030. A national strategy should be prepared and the state should take on a coordinating role with a special focus on Nordic cooperation, since Norway is at the forefront in this area.

### **From biomass and waste to high-value products**

The climate action plan must also contain a mission on the circular economy, including bioeconomics in particular. For example, this mission could be phrased in the following way:

“By 2030, Denmark must be able to turn biomass and waste into high-value products”.

The circular economy is about moving away from linear production and towards methods of production where materials are maintained in a circuit and where the need for new raw materials is reduced. In a Danish context, biorefining, whereby grass is converted to high-value products such as protein, can be highlighted as it can reduce emissions from agriculture, land use and/or soy imports with a high carbon footprint abroad and benefits the aquatic environment. In this way, the circular economy and bioeconomics hold potentials for reductions in greenhouse gasses across sectors and abroad.

A strategy with is underpinned by specific proposals, including a reform of the waste management system, funds for biorefining and the development of new materials should be prepared. These initiatives are described in the following chapters.

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<sup>12</sup> Energinet assesses that Denmark has a number of comparative advantages: Competitive electricity prices, a large renewable energy potential and a strong electricity grid with good connections outside Denmark, an efficient gas system with access to storage facilities that can also store hydrogen, a leading position in biogas, a district heating system that can harness the value of waste heat during energy conversion, a DataHub and functioning data handling for supporting new green business models.

### Master plan for green research and innovation

In addition to the three actual missions, there must be a general strategic commitment to research. It is important to ensure a food chain of new green ideas if Denmark is to meet the 2030 and 2050 goals in a way which is as cost-efficient as possible, ensures good jobs and is socially just. The master plan could include the following targets and sub-components:

- 10 more research grants for green purposes in 2030.
- A fund for business promotion that co-finances partnerships between universities, companies, green clusters and which rewards the repatriation of EU funds.
- DKK 200m for new green basic research centres.
- 500 green venture millions for an inventor/"unicorn" fund.
- Large-scale platforms across supplies and sectors.

The total financing need towards 2030 is assessed to constitute DKK 2.4bn. The master plan is underpinned by a 125% technology allowance for small and medium-sized enterprises (SME) which is described in more detail in the chapter on business and industry.

### The state's risks and yield

The state provides venture capital for many of the specific proposals that underpin the strategies described in the following chapters. Here, it should be considered very thoroughly to which extent the state should take ownership. First of all, the initiatives will, to a large extent, represent critical infrastructure. Secondly, the state should, as a general rule, not take on disproportionately large risks (failed investments) without reaping the rewards to the benefit of the collective, i.e. all Danes, in the form of returns etc.



# 03

## Sector coupling underpinned by major energy investments

The energy sector will play a key role in the green transition in Denmark. This can be seen clearly from figure 7's illustration of sector coupling and sectoral applications whereby energy production and its infrastructure are centrally placed. At the same time, a number of short-term investments can help us emerge from the corona crisis.

We have the preconditions for producing a large amount of green electricity and biogas, and we have the technology to use it in a number of sectors. For example, electricity produced by offshore wind farms can be used in heat pumps to replace oil heating boilers, it can be used in electric cars to replace petrol- and diesel driven cars, or - depending on future developments - it can be used for the production of alternative fuels such as hydrogen. The key word is "sector coupling".

### **A national strategy for sector coupling**

By means of sector coupling, different players in the energy system are linked more closely in order to create flexibility and cost-efficiency.

This is typically done using cross-cutting and creative solutions. It is, among other things, a question of using electricity from wind turbines for domestic heating (electrification through heat pumps), using waste heat in district heating supply, biogas from slurry and food waste in the production of hydrogen (Power-to-X).

Sector coupling will be crucial to achieving the 2030 and 2050 goals in a cost-efficient and adequate way. A national strategy for this area should therefore be defined. Among other things, the strategy should map out possible couplings, identify potentials and barriers and find solutions that can break down barriers. For example, investments into storage capacity provide benefits across sectors - for example between electricity grids and heating systems - as pointed out by the Climate Partnership for Energy and Utilities. It should be a focal point that the regulation of different sectors must be consistent and underpin coupling. The strategy could also include a number of initiatives to underpin flexible and

# FH proposes

13. A national strategy for sector coupling
14. Intelligent management of energy consumption
15. Oil- and natural gas fired heating boilers must be replaced by electric heat pumps and district heating and heat pumps are optimized
16. Phasing out of coal
17. Natural gas and oil in district heating replaced by large heat pumps, solar power and biogas
18. Electricity, biogas and energy efficiency measures in industry, agriculture etc.
19. Increased use of waste heat
20. A national plan for the deployment of charging stations
21. A strengthening of the gas grid
22. A strengthening of the electricity infrastructure
23. A strengthening of the district heating system
24. A strengthening of the hydrogen infrastructure
25. A fivefold increase of offshore wind energy
26. Elaboration of the plans for an energy island
27. Doubling of land-based wind energy
28. Expansion of solar energy, but with the focus on buildings, not field plants
29. A plan for expansion and more flexible regulation
30. A service check of regulation so that it underpins grid extension
31. A national biogas strategy and a tripling of biogas
32. A statutory framework for sustainable biomass
33. Power-to-X promotion through development funds, framework conditions, subsidies etc.
34. Support for carbon capture, including flagship projects in industry

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intelligent power consumption, i.e. power consumption outside peak hours such as 17.00-20.00 CET, for example, automatic lighting in buildings, release of data and time-differentiated tariffs. It is, however, important to FH that any initiatives should not be disproportionately expensive or disproportionately interfere with the everyday lives of workers, and low-paid workers in particular. The state should therefore ensure the regard for data security and consumer rights as well as social justice.

### **Electrification and other solutions will help us become independent from coal, oil and natural gas**

It is already possible to point to areas where it would be suitable to promote the use of electricity, biogas and waste heat over coal, oil and natural gas. FH proposes, as shown in box 5, a widespread scaling up of heat pumps, biogas and solar power solutions, increased use of waste heat, energy efficiency measures and the deployment of charging stations.

In households today, there are approximately 80,000 oil burners and 375,000 gas furnaces, which should be replaced with heat pumps or

district heating before 2030. Among other things, this must be done by banning the installation of conventional burners and furnaces from 2022 and by introducing requirements for their replacement in connection with transfers of ownership, where the buyer is - typically - already in contact with mortgage credit institutions and banks regarding financing. The replacements must take place in such a way that the necessary financial support is provided. The state should therefore provide a subsidy of 25%, for example, and financing models must be developed, as described in the chapter "Installations, structures and buildings". If there is to be increased taxation on natural gas and heating oil, compensation must be in place in order to avoid social imbalance (see the chapter on "Carbon taxes and other sources of financing").

Heat pumps can also contribute substantially in industry and agriculture. Both the Council on Climate Change and the Climate Partnership for Energy and Utilities find that there is considerable potential for reductions, because heat pumps can replace fossil fuels in processes that require low- and medium tem-

peratures. The total effect of this as, in addition to the replacement of natural gas with biogas, a transition of non-road transportation (agricultural machines, storage transport and construction machinery) and energy efficiency measures, is assessed to constitute 2.5m tonnes of CO<sub>2</sub>e.

The climate partnership estimates that the need for additional investments to carry this out amounts to DKK 19-25bn which is to be "financed by companies". Meanwhile, FH proposes that the costs should not be carried by companies alone. This is due, in part, to the risk of carbon leakage. A total of DKK 5bn should therefore be set aside for subsidies and the possibilities of co-funding through EU funds should be examined. The funds can be put to use through a green transition fund, an extension and enlargement of the existing fund for energy efficiency measures in industry and construction and/or a facility under the Danish Energy Agency or the Innovation Fund Denmark or in accordance with the Norwegian model. In Norway in 2007/2008, a tax on NO<sub>x</sub> emissions, which was a financial burden on companies and, thereby, represented an impediment to the desired NO<sub>x</sub> initiatives, was replaced by a foundation that funds NO<sub>x</sub> reductions instead. The foundation has disbursed approximately DKK 4bn to more than 1,300 projects and has created a market pull for technologies amounting to more than DKK 10bn.

In order to achieve the optimum effect, heat pumps must be put to optimum use in both households and businesses, and the installations must be of a high quality. Therefore, the state's renewable energy approval scheme must become mandatory. Alternatively, the support for heat pumps must be conditioned by installation performed by a renewable energy-approved company.

Electricity must also help us phase out fossil fuels in our cars. However, a precondition for this is the establishment of sufficient charging stations, both in urban and rural areas. Furthermore, a national plan should be

prepared. The plan should include reflections on a standardisation so that charging stations can be used for all types of cars and on adjustment of recharging to the amount of green electricity in the grid.

### **Electricity, district heating and hydrogen must be distributed**

As the consumption of electricity is to be increased, as proposed here, there is a need to transport it from manufacturers to households, companies and charging stations. Therefore, the transmission- and distribution grid must be expanded. At the same time, even greater incentives should be offered to use electricity in the greenest form and where it is most abundant. It is also necessary to expand gas grids, district heating and hydrogen grids, among others, in order to underpin the development of Power-to-X.

### **Electricity production must be increased**

In spite of energy efficiency measures, increased consumption of power and biogas represent a significant need for increasing electricity production further towards 2030 and 2050. It is therefore not sufficient when, in the energy agreement from 2018, an expansion amounting to three offshore wind farms is planned, together with a previous proposal to establish two additional offshore wind farms.

All in all, FH proposes, in line with the Climate Partnership for Energy and Utilities, a fivefold increase of the existing offshore wind energy capacity and a quick elaboration of the plans for an energy island which is expected to produce a minimum of 10 GW. An energy island could be a lighthouse or flagship project, which combines the strategic commitments to Power-to-X, export potential and/or efforts to get the EU to raise its 2030 climate goals, as proposed by FH in the chapter on international initiatives.

At the same time, land-based wind energy production should be doubled and electricity production from solar cells should be multiplied. In connection with the expansion



## A 10 GW energy island can create a further 150,000 full-time equivalents

of solar cells, and for the purposes of involvement, possible synergies with noise reduction and land use, there should be a special focus on expansion of solar energy on household rooves, public buildings and other installations - for example in connection with buildings and roads under construction. DKK 200m should be set aside for a demonstration programme and efforts should be launched to improve framework conditions and simplify rules. Among other things, regulatory barriers for municipalities to establish solar cells in line with regions and the state should be removed and the possibilities for leasing or renting solar cells should be improved.

In order to ensure transparency and predictability, a long-term plan for expansion should be prepared and more flexible regulation ensured in order to avoid drop-by-drop and slow processes. Offshore wind energy should be given priority in seascapes. Predictable and continuous procurement will benefit the industry and the relevant occupational groups, among other things by ensuring a stable, positive impact on employment and more clarity regarding future education & training needs. At the same time, it should be ensured that the regulation is in accordance with the 2030 and 2050 targets as well as relevant initiatives such as Power-to-X, higher ambitions in the field of climate change in the EU,

exports and employment. It is important that the EU and other countries in the region are involved in this work.

The long-term expansion and adjustment of regulation should take local support into account. In order to support local employment and development, requirements could be imposed in connection with tenders to establish syndicates which local businesses can join. The municipality of Norddjurds/Anholt has experienced good results with this approach.

### Biogas and biomass

Biogas production must be tripled in order to replace coal, oil and gas in industry and heavy transport, among others, to reduce emissions in agriculture and contribute to the development of Power-to-X. A national biogas strategy should be prepared which gives priority to the use of biogas so that it is only used if there are no alternatives (for example in high-temperature processes rather than in households) which underpins the expansion of gas infrastructure. Furthermore, the strategy is to create greater certainty for investors, and it should also examine regulation and the need for support. Biomass, among other things from straw and wood pellets, has, to a large extent, replaced coal over the past few decades and has reduced emissions. However, there are doubts regarding whether biomass can be considered to be climate-neutral, especially when imported. FH believes that a statutory framework for sustainable biomass, as proposed by the Climate Partnership for Energy and Utilities, is crucial to the overall credibility of our climate efforts - also if the initiative does not contribute to achieving Denmark's own national 2030 goal.

### New solutions are also needed

As a point of departure, in 2030, fossil fuels will still be used, for example in the production of cement and trucks and in trucks, airplanes, ships and construction machinery, combine harvesters, cutters etc. Supposedly,



approximately 20 businesses have works and processes which require very high temperatures and therefore cannot be electrified, for example Aalborg Portland, which emits approximately 2m tonnes of CO<sub>2</sub>e a year.

Some of the fossil fuels can be replaced by biogas. However, others need to be displaced by new solutions such as Power-to-X, which FH proposes a strategic focus on. The strategy behind this, which is described in the chapter on strategic commitments, must be underpinned by development funds, framework conditions and funding, including giving priority to beacons in research efforts, demonstration efforts, plants and flagship projects and, possibly, production support, if it turns out that it is not possible to create willingness-to-pay or sufficient demand in the transport sector.

The total financing need for these initiatives is assessed to constitute DKK 19.5bn. A large part of this can be financed by private investors and, possibly, the Danish Green Investment Fund. Meanwhile, the impact on employment is significant. In an example where funds are used for a 4.3 GW electrolysis system, it will create approximately 17,500 full-time equivalents.

Finally, a support scheme must be established for carbon capture, among other things in waste and biogas plants in heavy industry, in order to create a flagship project, support the strategic commitment to carbon capture and reduce emissions by 2030 with up to 2.5m tonnes CO<sub>2</sub>e. The scheme should be devised in such a way that projects should incorporate possible utilisation (CCU), including synergies with Power-to-X.

### **Employment effects and financing needs**

The proposed investments into the energy sector will be a motor for the Danish transition and employment towards 2030. The total expansion of production and infrastructure, including the offshore wind farms etc. agreed in the energy agreement 2018, will not just

drive the transition in many sectors, it will also create approximately 150,000-200,000 full-time equivalents. A 10 GW energy island can create a further 150,000 full-time equivalents. The investments that can already be implemented in the short term can help us emerge from the corona crisis. This is the case for, for example, the establishment of charging stations and expansion of infrastructure. If the crisis becomes lengthier, an expansion of the energy production can help with a recovery.

The need for additional investments is considerable. Based on assessments from, among others, the Climate Partnership for Energy and Utilities, it is estimated that they amount to DKK 250-350bn, see table 1. According to the calculations of the partnership, however, investments for expansions include over 1m electric cars and an electrification of the North Sea, which are not included in FH's proposal. On the other hand, FH's proposal includes other proposals, for example more carbon capture and expansion of public transportation, some of which can entail an increased need for electricity.

Whether it would be possible to implement FH's comprehensive proposal if the investments into expansion were scaled down can be examined. However, a scaling down may not leave room for the exportation of green energy that FH proposes in connection with the international initiatives in order to support the transition in the EU, among others (see footnote no. 9).

In any case, the main part of the investments into the expansion of infrastructure and energy production implies a return which makes it attractive to investors. For example, this applies to the offshore wind farms which, for their part, require DKK 85-105bn. Only a minor part of the investment would therefore need to come from the state.

# 04

## More climate-friendly installations, structures and buildings

Buildings account for approximately 40% of our total energy consumption. Climate-friendly construction and energy renovations are therefore an important part of a climate action plan for 2030 and the long-term transition towards 2050 when Denmark must be climate neutral. At that time, 8 in 10 existing buildings will still be in use.

Climate change solutions must be incorporated in the construction of new houses, roads and bridges. The carbon footprint reduction must begin at the building site. This applies to material wastage, electrification of machinery and planning of processes.

On this basis, FH proposes a number of initiatives for energy renovation, climate-friendly new constructions and fewer emissions from building sites<sup>13</sup>.

The proposals largely overlap with the recommendations from the Climate Partnership for Building and Construction, according to which the most important thing is not “more money from the state, but a good framework, requirements and demand”.

Many renovations and construction projects can be launched with a short notice and are relatively work-intensive. Therefore, a number of the proposal not only promote the transition but also the recovery after the corona crisis.

### Energy renovation in existing structures

In 2017, the Danish Building Research Institute (SBI) estimated a need for a DKK 789bn investment into basic renovation towards 2050 and that the additional investments of ensuring compliance with the energy

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<sup>13</sup> As a point of departure, the expansion of sustainable energy can reduce the need for energy efficiency and vice versa. The greener the energy, the less important is to the climate to conserve it. FH, however, believes that Denmark should focus on both energy efficiency and the expansion of sustainable energy. Firstly, there are often more socio-economic benefits in connection with energy efficiency measures, e.g. a better indoor climate. Secondly, energy efficiency measures can limit the costs and inconveniences of expanding energy production and infrastructure such as high-voltage cables. Thirdly, any surplus green energy could be exported and help replace fossil fuels abroad to the benefit of the Danish economy, employment and the climate.

# FH proposes

35. Energy renovation
36. Requirements for municipalities and regions to energy renovate at least 3% of the public stock of buildings annually
37. Requirements for indoor climate action plans
38. Dissemination and development of energy labelling
39. Facilitation for private companies
40. ESCO models and package solutions
41. The National Building Fund must include energy renovation
42. Establishment of a guarantee pool
43. Climate-friendly building regulations
44. Dissemination of life cycle analyses (LCA) and CO<sub>2</sub> targets
45. Climate-friendly asphalt
46. Demonstration buildings and knowledge-sharing
47. Climate-friendly building sites
48. Climate-friendly gardens and parks

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## Poor indoor climate is a problem in 25% of Danish schools and has a negative effect on children's health and learning capacity - and for the work environment of the teachers and educators

requirements of the building regulations would constitute approximately DKK 43bn<sup>14</sup>. If additional investments at a value of DKK 14.5bn before 2030 are applied, this would generate approximately 17,700 full-time equivalents alone<sup>15</sup>.

Specifically, the energy renovations should be promoted by means of a requirement that municipalities and regions must renovate a minimum of 3% of buildings every year. A requirement should be imposed on municipalities to prepare and implement indoor climate action plans that include energy efficiency measures. A poor indoor climate is a problem in 25% of Danish schools and has a negative effect on the children's health and learning capacity - and on the work environment of the teachers and educators.

At the same time, energy labels must be further developed and distributed. The energy label must become a continuously updated dialogue tool which is coordinated at the EU-level in order to ensure international standardisation and potential Danish exports of solutions. Within five years, buildings from before the year 2000 must be labelled.

For private companies, means should be allocated so that municipalities can facilitate energy screenings. This could be DKK 250m, for example. In addition to this, a number of initiatives suggested in the chapter on business and industry etc. can promote energy efficiency measures.

As for households, the ESCO models<sup>16</sup> should be promoted as well as package solutions where smaller projects are pooled to make them more attractive to investors. The aim of the National Building Fund must, furthermore, be expanded to include energy renovation so that it becomes easier for social housing organisations to finance energy renovation and create better coherence between basic renovation and energy renovation.

Finally, a guarantee pool should be set up for banks and mortgage credit institutes in order to hedge loans for customers with a view to carry out energy renovation and installation of heat pumps and for supporting the ESCO models and the package solutions. The pool could be at DKK 1bn, for example.

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<sup>14</sup> It is unclear how many renovations would be carried out anyway, i.e. a baseline projection. The DKK 43bn may therefore be an optimistic estimate.

<sup>15</sup> It does not include the necessary investments into basic renovations and the full-time equivalents they create.

<sup>16</sup> In ESCO models, the investment is financed by the supplier whose investment costs are subsequently covered by the economic return that the improvement provides in its effective life. In practise, the homeowner can therefore carry out energy renovation without having to worry about taking a loan or taking on risk.

### Climate-friendly new construction

A requirement should be introduced for the voluntary sustainability class and the building regulations to include CO2 accounts, overall economy, life cycle assessments and documentation for hazardous substances. This will, among other things, underpin green public procurement and tenders and it would ease specification requirements – which also benefits companies and their development of new solutions.

Public building contractors must assess overall economy in construction projects over a 30-year period so that construction projects compete on the basis of total construction- and business economics rather than capital expenditure. At the same time, the public sector and large-scale building contractors must specify CO2 targets for the total construction throughout its lifetime.

When it comes to roads, the national road network should, as a minimum, use climate-friendly asphalt that reduces the road's rolling resistance and thereby reduces CO2 emissions - among other things due to a reduction in fuel consumption. The initiative requires increased spending on roads. On the other hand, it provides cost savings on fuel consumption and maintenance.

Finally, the state must establish demonstration buildings that apply the proposed LCA- and CO2 accounts and show proposed solutions. The proposed solutions must, among other things, demonstrate how materials can be saved, how climate-friendly materials can be used (such as green cement or wood) and how processes can be planned. As a supplement, a public knowledge platform can be set up with a view to making all knowledge of the current and most recent standards and instructions available to professional players and private citizens.

### Climate-friendly building sites

Emissions from the construction process itself can be reduced through a number of state requirements: Drying and re-heating must

only take place using electric/district heating, the machinery must be fossil free by 2030, in large construction sites there must be CO2 accounts and there must be systematic recycling of materials. In addition to this, the industry itself can, according to the Climate Partnership for Building and Construction, reduce emissions by ordering electric/district heating for the building site in due time and prepare the planning and processes.

### Climate-friendly gardens and parks

There are approximately 1.4m detached houses and holiday houses in Denmark in addition to dwellings with shared outdoor areas and parks. Homeowners and municipalities should be directly involved in the green transition through the development and spread of knowledge on climate-friendly practises such as the planting of more trees, the use of greenhouses and ploughing in of organic materials. This initiative can have a number of side benefits such as biodiversity and should be integrated with a smart city strategy as proposed above.

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Climate change solutions must be incorporated into the construction of new houses, roads and bridges. Carbon footprint reduction must begin at the building site

# 05

## More circular economy, better disposal and management of waste

The circular economy is about moving from a linear production to methods of production where materials are kept in a circuit and the need for new raw materials is reduced.

Specific focus areas are, among others, a longer lifetime for products, waste management, plastic recycling and basing materials on biomass, such as wood or bioplastics.

The Climate Partnership for Waste, Water and Circular Economy has assessed that, with initiatives in this area, Denmark can reduce global emissions by 7-9m tonnes CO<sub>2</sub>e of which emissions in Denmark constitute 2.4m tonnes. The assessment is based on an optimistic vision for 90% recycling. However, even if the potential is less than that, the circular economy will be significant. The sorting and recycling of plastics alone can reduce emissions from waste energy plants by 0.7m tonnes CO<sub>2</sub>e.

The circular economy holds the potential for Danish companies to become more resource-efficient and competitive. Among other things, Copenhagen Economics has previously assessed that the average potential in improving resource consumption in Danish companies amounts to DKK 5-11bn a year<sup>17</sup>. Strengthened competitiveness and exports can increase employment and assign Denmark the role of a pioneer country<sup>18</sup>.

Many of the jobs that the circular economy could potentially create would be in rural districts and they would therefore contribute to creating more balance in Danish society. This applies to, for example, the expansion of biogas and the establishment of biorefinery plants.

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<sup>17</sup> Copenhagen Economics (2013), "Resource productivity and competitiveness in Danish manufacturing companies".

<sup>18</sup> See "Potential for Denmark as a circular economy" by Ellen MacArthur Foundation, 2015.

# FH proposes

- 49. A strategy for the circular economy
- 50. Reform of the waste management system, including standardisation of management and sorting
- 51. A requirement for increased use of garden and park waste for biogas production
- 52. A partnership and platform that collects and shares knowledge
- 53. Development of climate-friendly materials

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A more circular economy, however, will require development and dissemination of new ways of thinking and business models among both authorities, companies and households. In this connection, there is a substantial need for more knowledge, knowledge-sharing and coordination.

### **National strategy for the circular economy**

A national strategy for the circular economy that includes includes bioeconomics should be adopted. The backbone of the strategy must be a mission that ensures that, by 2030, Denmark must transform biomass and waste to high-value products. Among other things, the strategy must:

- Analyse amounts and distribution of waste and biomass, including biogas, and prioritise their use.
- Assess the need for the expansion of plants, infrastructure and research.
- Set out objectives, including addressing export opportunities, EU-regulation and sources of investment.
- Strengthen investments and framework conditions and underpin the demand for circular products.
- Focus on skills and training, as recommended by the Climate Partnership for Waste, Water and Circular Economy.
- Contain guarantees for a good working environment which takes health and safety into consideration which is also described in the chapter “Green jobs - with a safe and healthy work environment”.
- “Green jobs – with a healthy and safe working environment”.
- Ensure coordination in this area – which be necessary since value chains cut across sectors and players.

### **Initiatives that underpin the circular economy**

The strategy must be underpinned by a number of specific proposals as shown in box 7. The initiatives must be seen in connection with the other proposals that will also underpin a circular economy. These are, for example,

more research, socially sustainable public procurement, dissemination of life cycle analyses (LCA) and establishment of biorefineries. See figure 7 for an illustration of this.

### **A reform of the waste management system**

Better management of waste and materials, including plastics, is a precondition for more recycling and has been recommended by a number of climate partnerships. A reform of the waste management system should be implemented. It should harmonize municipal waste management systems, and make it mandatory for households, public institutions, companies, kitchens and canteens to sort waste. At the same time, it is crucial that the waste management reform safeguards health and safety at work.

### **Pooling and sharing of knowledge**

The shift in mentality and business models that the circular economy entails requires authorities and businesses to share knowledge - both regarding challenges, solutions, best practices and how companies can gain access to materials. A partnership should be established in which the state takes on a coordinating role. Among other things, the partnership must develop new proposed standards and solutions and educate, inspire and support businesses. Finally, the platform must provide guidance on relevant materials and show how companies and municipalities can get access to them - among other things by setting up a data bank where recyclable materials are registered for use. The first step could include building materials which is said to account for 35% of the total waste volume and has significant recycling potential.

### **The development of new green materials**

New materials must be developed to convert waste and biomass to high-value products. This can, for example, be biopolymers from biomass to replace fossil fuels in plastics production. The development can be underpinned by green procurement (see above), however funds should also be set aside for development, demonstration and scaling. For a start,



funds to the extent of DKK 2bn should be provided in the form of subsidies, loans and/or guarantees under the Danish Green Investment Fund which already has a capacity of DKK 25bn and which is set to become

operational in 2020. It can be expected that there will be a great potential for mobilising private investments since new materials, solutions and cost savings in the area of circular economy can entail financial return.

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*By 2030, Danmark must be able to transform biomass and waste into high-value products*



# 06

## Climate-friendly development of foods, consumption, agriculture and forestry

Food production and consumption is a significant source of greenhouse gas emissions, both in Denmark and globally. Balancing the reduction of global emissions while also ensuring sufficient and good foods will become even harder towards 2050 at which time the global population will have reached 10bn and people will, fortunately, be less poor.

While food production and agriculture constitute part of the challenge of climate change, they also constitute part of the solution. Afforestation and the extraction of organic soils are some of our best tools for carbon removal and carbon storage. They can play a defining role in the achievement of Denmark's 2050 goals for climate neutrality and the similar goal in the Paris Agreement of achieving a balance between emissions by sources and removals by sinks.

Denmark has - with its highly modernized agricultural sector - a special opportunity. By developing and disseminating new climate solutions, we can reduce global emissions

more than we would be able to do by dismantling our domestic production, which is relatively modest seen on a global scale. At the same time, we can increase exports to the benefit of growth and employment.

### **Consumption, production and barriers**

It is sometimes discussed whether the solutions to the challenge of climate change can be found in production or consumption. This is - to put it in food terms - a chicken and egg problem. Demand from consumers drives production. However, production should, regardless of demand, be organised in a way that is climate-friendly. In this way, both consumption and production are addressed.

Unfortunately, there are multiple barriers to mitigation efforts. On the production side, the agricultural sector is exposed to competition, and therefore, a Danish go-it-alone approach with its ambitious regulation can lead to a relocation of production to countries with lower production costs. This would neither benefit the climate, the Danish economy nor

# FH proposes

54. Development and dissemination of climate accounts
55. Requirements for climate-friendly management of slurry and manure and funds for solutions
56. Modern stables for cows and fattening pigs
57. Methane emissions reduction from livestock production, including the substance “x”
58. Alternative proteins, including biorefining and grass production
59. Diet composition in accordance with the dietary guidelines
60. Less food waste
61. Extraction of organic soils
62. Increased afforestation and forest production (5,600 hectares annually before 2030)
63. A strengthened framework for use of wood

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employment. At the same time, the individual farms may have a limited capacity or limited access to financing. Finally, the biological processes behind emissions and removals are complex and more initiatives can be costly or have adverse side effects. Accordingly, there is still a need for research and development into better instruments.

In terms of consumption, it can be difficult to find out the carbon footprint of what you eat. And it can be difficult to change spending habits without experiencing it as an unwelcome change and intervention that reduces the quality of life or which creates a social imbalance. This is something that FH opposes.

### Specific initiatives

Box 8 sums up FH's proposals for initiatives that reduce the climate impact from consumption, create a more climate-friendly production and promote carbon storage. The total effects of the initiatives can, based on the work of the climate partnerships, reduce emissions by approximately 5.4m tonnes of CO<sub>2</sub>e. In addition to this, the initiatives will contribute to other sectors. For example, slurry from agriculture contributes to biogas production while forestry can replace more climate-impacting materials in construction. The proposals must therefore be considered in relation to a number of FH's other proposals.

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Consumer  
information,  
improved food  
preservation and  
lower prices on  
surplus food

The total financing need is assessed to constitute approximately DKK 20bn of which a considerable share can be financed by private investors or EU funds.

### More climate-friendly production

In order to identify challenges and solutions at the individual farm, additional funds should be allocated to further development, demonstrations and scaling up of climate accounts.

At the same time, specific initiatives must be promoted. Requirements should be introduced for a quick of slurry and - at the EU-level - a requirement to add so-called “nitrification inhibitors” from the time when they meet the necessary standards for health and price etc. Funds should also be set aside for modernisation and scrapping of outdated stables with a view to establishing an even more climate-friendly production. In total, approximately DKK 6bn can be allocated for subsidies towards 2030.

Finally, funds should be allocated to the development of new climate measures. Firstly, funds should be allocated to research into biorefining and establishment of at least two major biorefinery plants in partnership with private investors. These plants should contribute to the development and scaling up of technologies, including the production of alternative proteins which, among other things, can reduce the need for soy imports. The establishment of the two plants is assessed to generate 7,000 full-time equivalents. In order to support the production of grass for biorefining, a subsidy scheme of DKK 500m should be established, for example, from 2023 to 2030. The total initiative to promote biorefining will underpin the strategic commitment to the circular economy, including bioeconomics.

Secondly, funds should be set aside for research into reduction of methane emissions from livestock production, including a substance currently referred to by scientists as “x” that can reduce emissions considerably.





### Reduced climate impact from consumption

Some foods have a lower carbon footprint than others. For example, chicken typically has a smaller carbon footprint than lamb and beef. At the same time, foods with a smaller carbon footprint are often cheaper and healthier. To many, a climate-friendly diet can therefore be a win-win situation. FH believes, basically, that the individual should be allowed to choose what he or she will eat. However, the choice of what to eat must be an informed one. This will make it easier for the individual to decide whether to eat climate-friendly foods, healthy foods, cheap foods or to prioritize in an entirely different way.

The following dietary recommendations must, like other recommendations, reflect their climate impact, and information campaigns must be carried out. At the same time, the public sector must take the lead when it comes to diet.

Regardless of what we eat, waste should be avoided. Therefore, a common method for measuring food waste and reduction targets should be prepared, and the effort should be strengthened - among other things through consumer information, improved food preservation and lower prices on surplus food.

### Promotion of carbon removals and storage

A national plan must be prepared for the extraction of organic soils that includes a prioritization of the most important areas. At

the same time, funds must be set aside for the extraction of 47,700 hectares and, if required in order to meet the 2030 target, funds to extract another 60,600 hectares. The state should, furthermore, give notice of climate-friendly cultivation restrictions on soils with a high priority according to the national plan. The possibilities for strengthening and/or financing the efforts at the EU level or via private investors, including foundations and innovative sources of investment, should be examined.

In addition to this, funds should be set aside for increased afforestation and forest production, including 5,600 hectares of new forest a year towards 2030. In this connection, the state should examine options for co-financing, for example from foundations, private investors and waterworks with an interest in afforestation for groundwater protection.

The carbon in wood should, preferably, be stored permanently. The state should therefore make a strategy for climate-friendly timber construction. This includes a service check of the fire safety regulations, taking safety etc. into account. Whether more wood, specifically, should be used will depend on the life cycle analyses in construction that FH proposes in the chapter on installations, structures and buildings and that will include all construction materials.

# 07

## Transportation: Reform of taxation of cars and transformation of heavy transport

Changing governments have shared the ambition that all newly registered cars must be low- or zero emission cars by 2030 and that, by 2030, there must be 1-1.5m electric cars in Denmark. This is a very ambitious aim which FH generally supports. However, it must not leave a deep hole in the national coffers, increase inequality or reduce mobility.

The good news is that the population looks positively on replacing the petrol hose with an electrical cable. As shown in figure 10, almost half of workers find in “very” or “most” likely that they will buy an electric car within the next 5 years. However, the ones with the highest income are also the most likely to buy an electric car.

Nevertheless, a total of 42% are “very” or “somewhat” willing to pay extra for an electric car in order to protect the climate.

### Barriers and challenges

Meanwhile, we are far from meeting the goals: Today, less than 1 in 100 cars are electric and, according to projections, there will only be 5-10% electric cars by 2030. The market for electric cars is still at an early stage, and it is considerably more expensive to buy an electric car than a conventional car with a petrol engine or a diesel-driven car.

A majority of interviewees also state that electric cars must be cheaper if they are to consider buying one, as can be seen from figure 12. And that wish is, obviously, even greater in the share of the population whose incomes are lower and where the household economy is already strained. More than half of the interviewees also point to the need for publicly available charging stations, just as there is a widespread call for electric calls to “get better mileage”.

# FH proposes

64. Refrom of car taxation: Climate-friendly cars must be cheaper and the recurrent taxation must be higher
65. Establishment of gas tanks
66. Partnership between the energy industry, the transportation industry, workers and authorities
67. A subsidy scheme for the use of climate-friendly fuels
68. Focus on eco-driving
69. A fund for development and demonstration, including specific tests
70. A plan for railways, including expansion and electrification
71. Expansion of public transportation, including a national plan

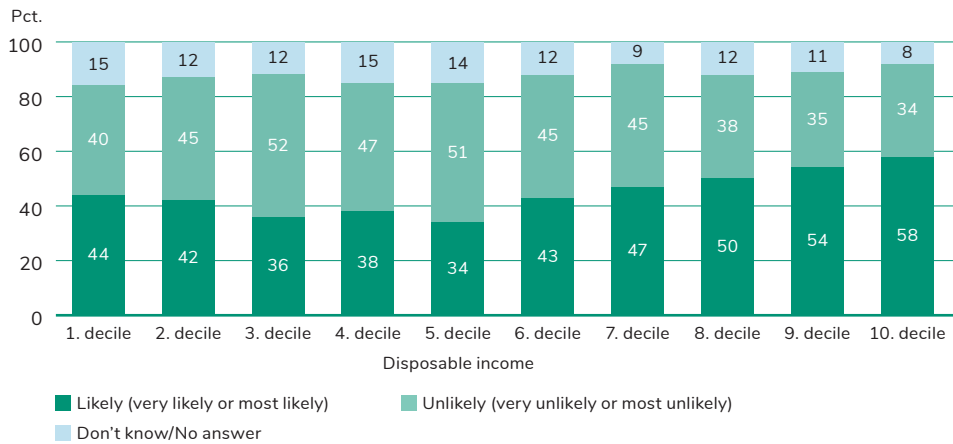
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Some actors have suggested increasing the use of electric cars by exempting their owners from payment of vehicle registration fees. A complete exemption of the vehicle registration fee will make a large hole in the public purse. Furthermore, the current tax incentive is targeted to families who can afford the relatively expensive electric cars. And

targeted tax breaks for the wealthiest citizens increase inequality. Other players have suggested a ban. But a ban would, in practise, affect low-income groups the hardest because there is a lack of adequate alternatives to the fossil-fuel cars. And it is doubtful whether this will have changed in 2025 or 2030 in the absence of new political initiatives.

**Figure 10: Expectations for the purchase of electric cars within five years**

How likely is it that you will purchase an electric car within the next five years?



Source: FH's work-life survey, 2020.

Note: 2,579 respondents.

### Reform of car taxation

FH believes that a reform of car taxation is needed. The reform must ensure that subsidies for electric cars is widely distributed across car sizes and income groups and that the state's income from car taxation is maintained.

FH therefore proposes a reform of car taxation so that climate-friendly cars become cheaper to acquire, allowing the average Danish worker access to the electric car market. However, the recurrent level of taxation will rise in order to maintain the state's income.

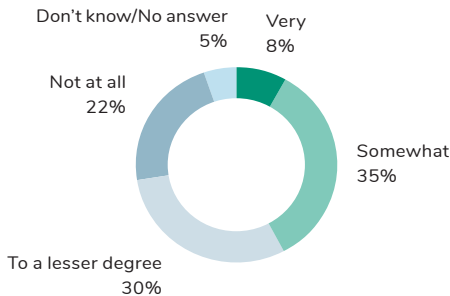
More specifically, this scheme will bring:

- Higher tax allowances for energy efficiency measures in the vehicle registration fee.
- The possibility for a negative vehicle registration fee for smaller electric cars.
- Value-based addition to the motor vehicle tax.
- Higher vehicle registration fee for expensive fossil-fuel cars.
- Surcharge for multiple cars per household.
- Introduction of road pricing and higher fuel charges.



**Figure 11:**  
**Willingness to pay extra for an electric car**

How willing are you to pay extra for an electric car rather than buy a conventional car to protect the climate?



**Source:** FH's work-life survey, 2020.

**Note:** 2,579 respondents.

- A national review of automotive policies every three years with a view to monitor the take-up of electric cars, the state's income from car taxation, mobility and the redistributive effects of car taxation.

With the reorganization, there will be a large incentive to replace the car with the climate-friendly alternative. This leaves a bill to be distributed to all car owners, however, with a higher share to be paid by high income groups with one or more expensive cars per household. This ensures that the green transition of the fleet of cars is collectively funded.

In addition to the reorganization of the tax reform, the state must improve the framework for the spreading of electric cars through the deployment of charging stations as described in the chapter "Sector coupling underpinned by major energy investments".

### Green transition of heavy transport

Contrary to passenger transport, where electric cars are considered as the most promising technology, it is still too early to say which

technologies will be best for heavy transportation, e.g. buses and trucks, in the long term. The investments into both biogas and Power-to-X proposed by FH keep the door open over the next few years.

In the short term, electrification is not possible. There are better opportunities for using gas. Funds should therefore be set aside for the establishment of gas tanks so as to obtain an expansion as seen in Germany. This will require striking a balance between the use of gas tanks in the short term and the possibility for better technologies in the long term.

In order to assess and adjust expectations for gas, Power-to-X and demand in the coming years, there should be a close dialogue between the relevant parties. This can give investors greater certainty when it comes to knowing which amounts or types of fuels will be supplied and in demand in coming years – also as part of the green and socially sustainable public procurement proposed above. Specifically, a partnership should be established between the energy industry, the transportation industry, workers and authorities.

Demand and, thereby, development of climate-friendly fuels should, furthermore, receive support through a subsidy pool at an amount of, for example, DKK 1bn towards 2030. The pool could, among others, provide subsidies for the first 10,000 trucks driving on alternative fuels.

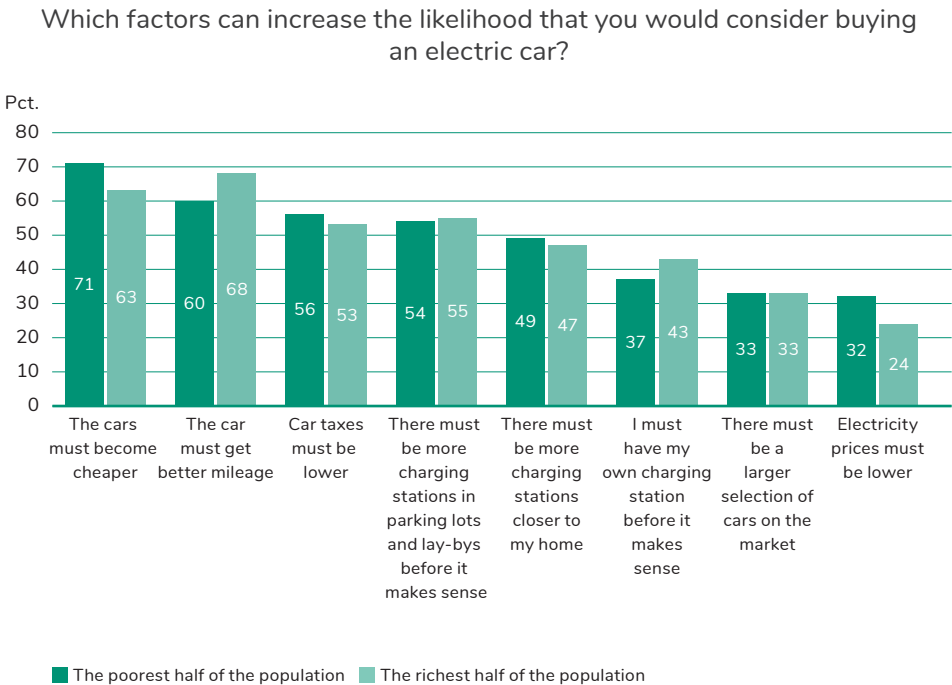
It is not just the fuel for the engine, but also the driver behind the wheel, who contributes to the carbon footprint. Increased focus should therefore be given to eco-driving. Today, eco-driving is already part of the mandatory training and education. Even though this training can reduce fuel consumption and thereby reduce costs for the individual company, it can be a difficult investment to make - especially for small companies. As the Climate Partnership for Land Transportation recommends, it should be examined how eco-driving can become even more widespread on roads and tracks.

“

FH believes that a reform of  
car taxation is needed



**Figure 12: Reflections on the purchase of electric cars**



**Source:** FH's work-life survey, 2020.

**Note:** 2,579 respondents. The income distribution is based on disposable income deciles.

Finally, the state should set aside DKK 100m for pilot projects with, for example, increase of a truck's payload capacity, double trailer combined vehicles, databased/intelligent solutions etc.

### Railways and public transportation

The state should prepare a plan for the railways of the future, including expansion and electrification, and, in that connection, it should set aside funds for completing the planned electrification as soon as possible and to electrify additional railway lines. The work should have an international focus, especially on cooperation with Norway, Sweden and Germany - in particular with a focus on possibilities for promoting high speed trains

between selected cities in Europe – and launch relevant initiatives at the EU-level, such as a European rail fund. This can strengthen the foundation for Danish exports of electricity, see above, and replace air traffic, which benefits the climate, in the absence of climate-friendly aircraft fuel.

At the same time, public transportation should be expanded where it is relevant. This requires incorporation of the dissemination of electric cars/charging stations, hydrogen infrastructure etc. The first step should therefore be that the state prepares a national plan with the involvement of the relevant players. The next step will be the practical expansion for which a fund of DKK 2bn can be set aside.

# 08

## A green transition of business and industry

Industry and production account for a considerable share of Denmark's emissions and there are a number of technologies in place to reduce these emissions. Among others, these are energy efficiency measures, heat pumps and the use of biogas instead of fossil fuels. Carbon capture can also become cost-efficient within a few years.

Meanwhile, companies face a number of barriers, including costs and fierce international competition, which involves a risk of relocation of production and workplaces and subsequent carbon leakage. At the same time, among manufacturing companies, there are many small and medium-sized enterprises (SME) with few workers and a limited capacity and insufficient sources of investment. This means that it is difficult for them to prioritize green climate-friendly measures and to meet the reduction potentials even though these measures would have a short payback time, which can, among other things, be the case for energy efficiency measures.

No single solution can remove these barriers. FH therefore suggests a wide range of initiatives to underpin the transition by:

- Creating a market pull for green solutions.
- Strengthening climate-friendly products and competitiveness for companies.

- Strengthening the level of information and capacity.
- Strengthening access to financing.
- Supporting the development of new climate initiatives.

The specific initiatives summed up in box 10 must be seen in connection with a number of other initiatives. This is especially true for "green and socially sustainable public procurement" that is crucial to creating increased demand for green products, "expansion of biogas", "facilitation of repatriation of EU funds" as well as international initiatives to increase the level of ambition and the export of Danish solutions.

The initiatives can drive an expansion of the instruments we already know such as energy efficiency measures and electrification. However, they can also drive a continued development of new solutions which can increase Danish exports of green technologies. The 125% technology deduction for SME's will provide the opportunity to compensate for the technology gap they often have with large companies, and it will enable them to contribute to the long-term transition and higher exports. They will also underpin the master plan for research described in the chapter on strategic commitments.

# FH proposes

- 72.** Greater demand for green products
- 73.** Development and dissemination of standardized tools
- 74.** Promotion of higher sustainability assessments in SMEs
- 75.** Consultancy, skills development and facilitation
- 76.** Strengthening of the companies' further access to green financing
- 77.** Strengthening of the companies' further access to green financing

➤ Read more at: <https://fho.dk/tekniskbaggrundsnotat>

# 09

## International initiatives for the climate, competitiveness and exports

While focusing on our own national 2030 target, we must remember to look beyond borders and consider international aspects as well. Otherwise, we will not succeed with our own domestic transition and will not harvest the opportunities for contributing to global climate change solutions.

It is important for FH to continue the green development in the EU with initiatives that reduce uncertainty for workers, the corporate sector and investors whose contributions and commitment are crucial to the transition.

Higher EU ambitions can benefit the climate, reduce carbon leakage and increase Danish exports. Higher ambitions in all of the EU will not just benefit the climate directly, it will also reduce the risk that climate initiatives in Denmark will push production, and thereby workplaces and emissions, abroad. The launch of climate initiatives in other EU member states ensure a more level playing field for Danish companies in the face of

international competition. This is especially important for manufacturing companies, industry and agriculture. Higher ambitions can also increase demand for Danish solutions to the benefit of growth and employment. This can be green energy and climate-friendly technologies, for example, and the circular economy, research and technology deductions for SME's.

Denmark should therefore strive to ensure that the EU commits to a reduction target that corresponds to the Danish one. At the same time, there is a need for a revision of the EU's emissions trading system (ETS) in order to avoid that reductions in Denmark are countered by increased emissions in other member states.

In the next stage, Denmark should - together with the other member states - reduce the risk of carbon leakage to third countries by introducing a European carbon border tax.

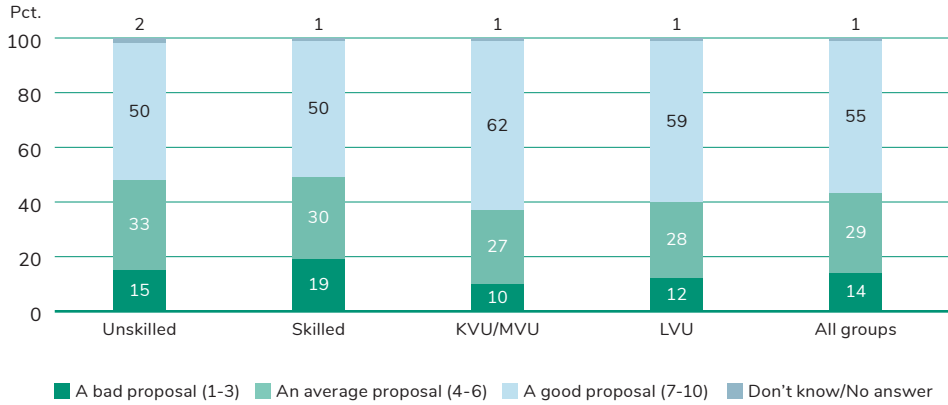
# FH proposes

- 78. The EU's 2030 targets must be increased by up to 70%
- 79. The introduction of a European carbon border tax
- 80. Strengthened efforts in the areas of knowledge sharing and exports
- 81. Denmark must be a pioneer country in circular economics
- 82. The Just Transition Fund must have a broader focus
- 83. Territorial just transition plans should be prepared as soon as possible

➤ Read more at: <https://fho.dk/tekniskbaggrundsnotat>

**Figure 13: Views on carbon customs duties**

On a scale from 1-10, rate a proposal to tax imported products depending on their total greenhouse gas emissions



Source: FH's work-life survey, 2020.

Note: 2,579 respondents.

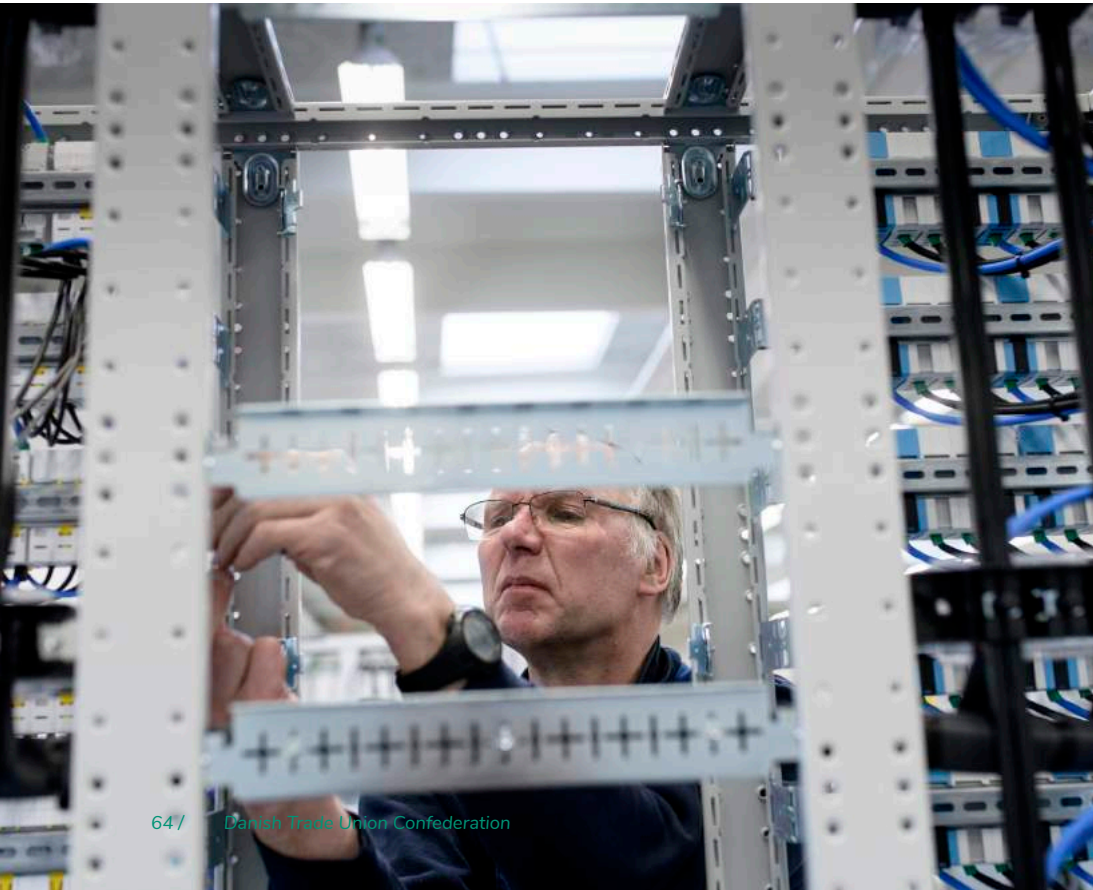




Figure 13 shows that there is wide support for this at the national level.

It is worth considering to combine the work to increase the ambitions at the EU level with the proposed efforts in Power-to-X, carbon capture, circular economy and research described above. Denmark could argue that it has launched efforts that can also contribute the transition in other countries - both when it comes to specific technological developments and the production of green electricity which will, perhaps, exceed Denmark's own need.

### Exports and widespread use of Danish solutions

We must harvest the benefits of the investments Denmark makes in terms of climate initiatives. The initiatives must not just benefit the climate, they must also benefit exports and employment.

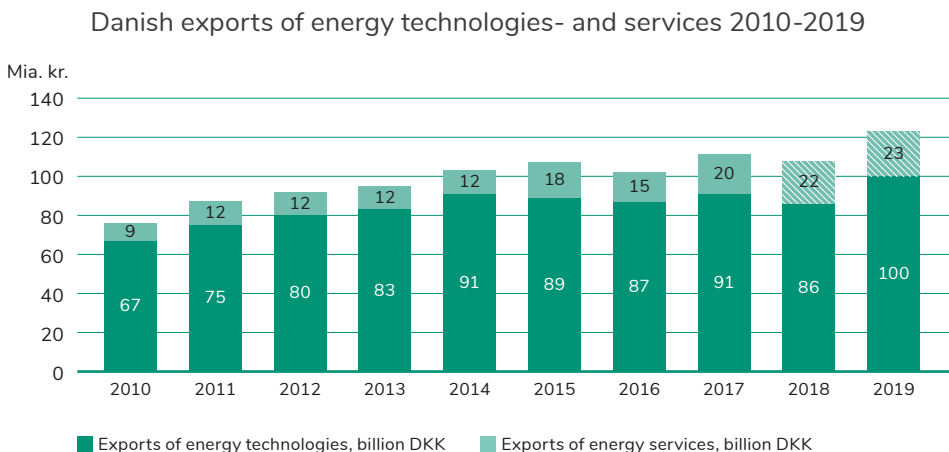
As can be seen from figure 14, the export of energy technology has been increasing, and today, it constitutes a significant share of the



Higher ambitions can increase the demand for Danish solutions to the benefit of growth and employment

total Danish commodity exports. And at the government level, the cooperation with China has, according to the Danish Energy Agency, helped China reduce its emissions by 22m tonnes of CO<sub>2</sub>e - which corresponds to approximately half of Denmark's emission in a single year<sup>19</sup>. These reductions do not contribute to achieving Denmark's national

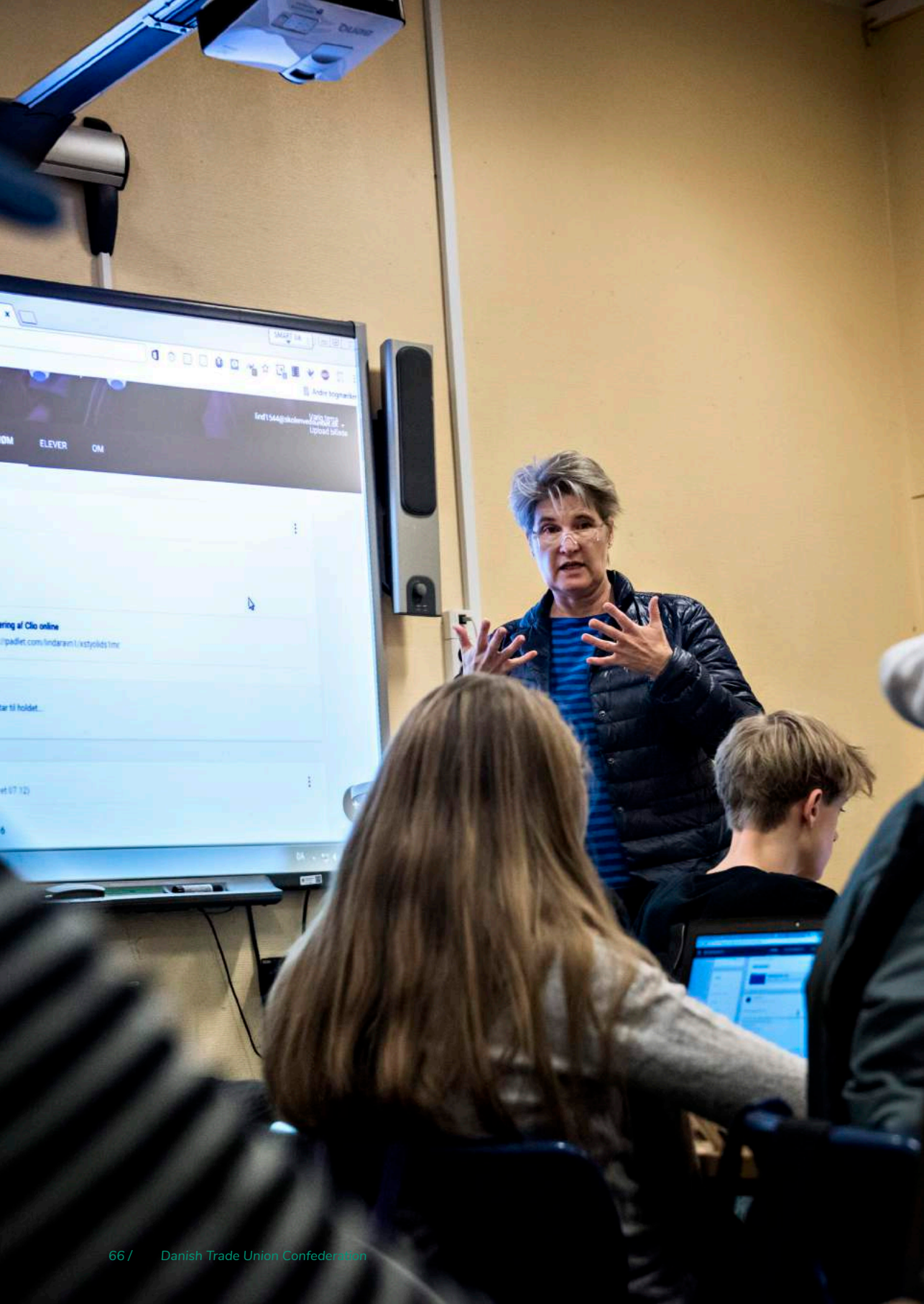
Figure 14: Danish exports of energy technologies- and services 2010-2019



Source: DI Energy, Export of energy technologies- and services 2019.

Note: The exports are in nominal terms and not including oil rigs. The exports of energy services in 2018 and 2019 are forecasts.

<sup>19</sup> Politiken, 2 July 2019, "Danmark hjælper Kina med CO<sub>2</sub>-reduktion"



2030 targets, but they contribute to solving the global challenge of climate change and to increase the interest in Danish solutions.

The efforts should be boosted further through a strengthened export strategy for green growth which, among other things, focus on the strategic commitments within, for example, Power-to-X, carbon capture and circular economy. Especially in the area of circular economy, Denmark should strive to become a frontrunner. In that connection, the strategy should also focus particularly on climate-friendly foods and technologies in agriculture.

Specifically, the strengthening can be done by allocating more resources to the Foreign Service and by coordinating its efforts with the Export Credit Agency and the Investment Fund for Developing Countries, among others.

### A just transition in the EU

Denmark must fight for a just and socially balanced transition in the EU. In January 2020, the European Commission submitted a proposal on the establishment of a "Just Transition Fund" which contains many good initiatives.

The fund should, however, have a broader aim than the one proposed by the Commission. Among other things, the fund should not just help occupational groups that are directly affected by the transition, but other groups as well. For example, the oil industry has thousands of direct and indirect workers. At the same time, the fund should not just focus on retraining those who have already lost their jobs, but also on continuing training and education in general. There must be development and not dismantling. Finally, the fund must be financed by new and additional funds

- not by a redistribution of funds that have already been allocated to employment, skills development and poverty reduction.

Domestically, the Government must, as quickly as possible, launch the preparation of the territorial just transition plans, which is one of the conditions for obtaining full funding from the EU mechanisms. This preparation should take place in cooperation with the relevant parties, including municipalities and the trade union movement.

# 10

## Carbon taxes and other sources of financing

Throughout the years, many economists have suggested the most cost-efficient and technology-neutral tool for reducing greenhouse gas emissions would be a carbon tax. In principle, the climate impact of different products should be calculated and a corresponding tax should be imposed. This would strengthen the incentive to use climate-friendly technologies or consume climate-friendly goods. Most recently, the Council on Climate Change and Kraka/Deloitte have proposed a uniform tax on greenhouse gas emissions in Denmark, and figure 15 shows that there is widespread support for a uniform carbon tax.

### Challenges and barriers to carbon taxes

While a uniform carbon tax works well in theory, there are a number of significant challenges. Three in particular are important:

1. **Distributive effects:** Higher carbon taxes specifically affect goods and services in energy consumption, food consumption etc., and this will affect low income groups the hardest. The immediate effect of carbon taxes is therefore higher inequality. The inequality can be counteracted by more extensive tax reforms, but these can result in a lower supply of labour and leave people who are particularly exposed to the challenge of carbon leakage without a solid foothold on the labour market.
2. **Carbon leakage:** A production tax on CO<sub>2</sub>-emissions risks pushing Danish production abroad, where companies are not subject to similar requirements. This will reduce the global impact of Danish initiatives and lead to loss of Danish workplaces. The leakage problems can be met with a sector-specific basic allowance, but it is unclear whether, and to what extent, the basic allowance would work as intended.
3. **Practical implementation:** The carbon footprint of a specific product is often difficult to calculate. This is, especially, the case where production chains are cross-border and in agriculture, where emissions and capture are part of complicated biological processes. In addition to this, there is limited knowledge on the price sensitivity of different products/services, including how significant changes to taxes would be required in order to obtain an actual behavioural effect, and thereby a climate effect.

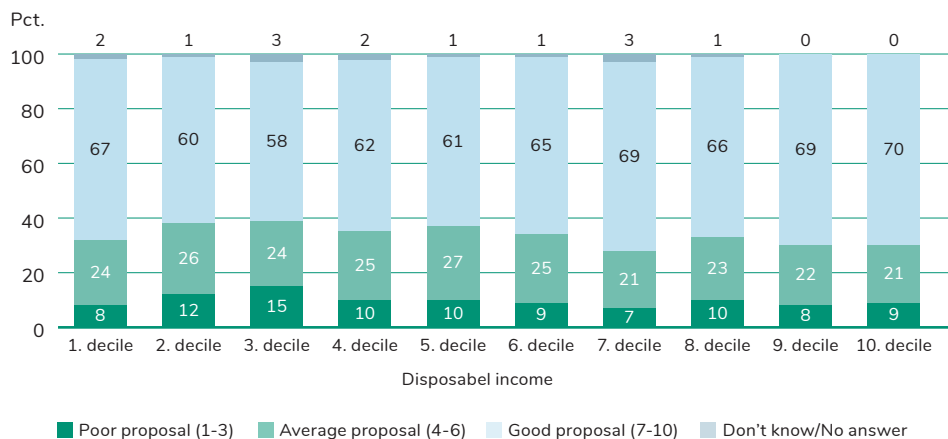
# FH proposes

84. An expert commission should design carbon taxes taking into account emissions reductions and technology development, the, risk of carbon leakage and inequality
85. Mobilisation of private financing
86. Loan financing/green bonds
87. Financing by the Danish Green Investment Fund and through green bonds from KommuneKredit (credit association with the purpose to provide loans to Danish municipalities)
88. Financing through income tax
89. Establishment of a unit that facilitates repatriation of EU funds

➤ Read more at: <https://fho.dk/tekniskbaggrundsnotat>

**Figure 15: Attitudes towards a general climate tax**

On a scale from 1-10, rate a proposal for a homonymous tax on greenhouse gas emissions whereby the most polluting products and processes are taxed the highest

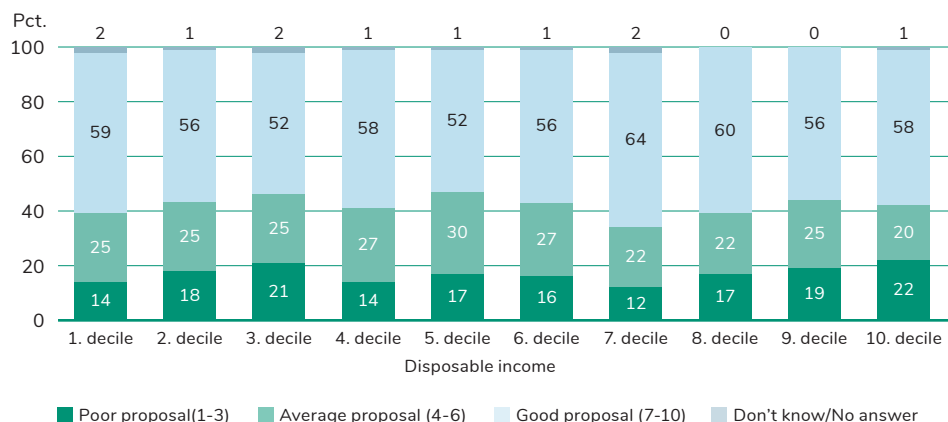


Source: FH's work-life survey, 2020.

Note: 2,579 respondents.

**Figure 16: Attitudes towards a proposed air tax**

On a scale from 1-10, rate a proposal for an air tax



Source: FH's work-life survey, 2020.

Note: 2,579 respondents.

### Reason and balance

FH recognises that there may be good theoretical arguments in favour of a carbon tax. At the current time, however, it is unrealistic to implement a uniform carbon tax without sufficient regard for inequality, carbon leakage and practical implementation. Instead, there is a need for a more long term, sensible and balanced strategy which ensures the necessary regard for distribution and which reduces the risk of carbon leakage.

First and foremost, the idea of a perfect, uniform carbon tax must not get in the way of sector-specific solutions that work for the climate, industry and humans, and which do not exclude a harmonization of taxes in future.

In some sectors, carbon taxes can be introduced in the short term. This could, for instance, be in aviation, where figure 16 shows that there is wide support among Danish workers. As many as 57% find it to be a good proposal, while only 17% find it to be a poor one. In comparison, only 27% believe that a tax on meat is a good proposal, as can be seen in figure 17. In other sectors, however, there is a need for more knowledge and longer phasing in or of other solutions. At the same time, considerations about taxes must take into account the effects of the corona crisis.

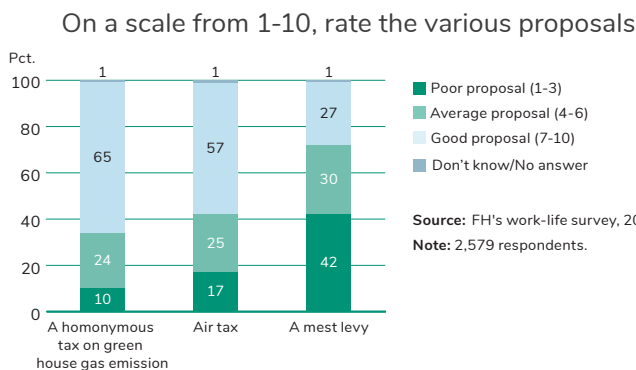
### FH's proposal for a carbon tax

On this basis, FH proposes an overall initiative based on three elements. First of all, an expert commission must be set up and tasked with designing carbon taxes for each sector taking into account the following binding principles:

- The tax must reduce emissions and/or create an incentive for technology development. It must be examined whether the tax will lead to a genuine behavioural effect and whether it can be implemented without large administrative costs.
- The tax and phasing-in must not lead to considerable carbon leakage. This can be ensured, among other things, by promoting/conditioning international cooperation and regulation in other countries and/or by a deduction for companies exposed to competition.
- The proceeds and the distributive effects must be documented and it must be specified how the proceeds should be used to counteract a possible increase in inequality.

Secondly, a binding political goal should be defined according to which, based on the work of the expert commission, a plan for the

Figure 17: Attitudes towards different taxes



implementation of carbon taxes should be ready before the end of 2022. And by 2025, carbon taxes should be introduced to the extent that they meet the above principles.

Thirdly, an aviation tax should be introduced at a level which would affect either consumer behaviour or the incentive for airlines to reduce emissions. The tax should be progressive, for example through a higher tax for business class or long-distance trips.

In connection with the three elements, it should be clarified how the proceeds from carbon taxes are best applied, i.e. taking distribution, carbon leakage challenges and climate impact into account. In this regard, it may be relevant to reduce the standard electricity tax and electric heating charge.

### Other sources of financing

Carbon taxes can both strengthen the incentive for climate initiatives and bring proceeds that contribute to financing the green transition. The proceeds, however, will not be sufficient to cover a financing need of DKK 230-450bn. First of all, since carbon taxes are expected to be introduced gradually they cannot contribute considerably in the short term. Secondly, proceeds from carbon taxes can be expected to decline over time as the taxes lead to an (intended) change in behaviour, for example fewer flights. There is therefore a need for more sources of investment.

### Mobilisation of private financing

Private financing must be mobilised in order to cover the main part of the DKK 230-450bn financing need. The potential is large, since most investments can provide a return, and the investments will therefore be interesting to private investors such as banks, pension funds and insurance companies. This applies to, for example, investments into the expansion of offshore wind energy, energy efficiency measures in buildings and biorefining. In 2019, pension- and insurance companies have declared that they will offer DKK 350bn in green loans and investments in Denmark and abroad.

A minor share of the financing need must be covered by individual companies and households. Among other things, this applies to the installation of heat pumps. However, FH proposes that government subsidies are applied to a wide extent.

### Government bonds and the Green Investment Fund

The state is expected to provide a maximum of DKK 75bn of the total financing need. These funds will primarily finance subsidies and investments. Part of the funds can - due to the negative interest rate and low level of government debt - be obtained by issuing bonds to provide financing for selected initiatives through, for example, the Danish Green Investment Fund. The fund already has a capacity of DKK 25bn and, in 2019, Holland raised almost DKK 45bn by offering green bonds at an interest rate of 0.5%.

A number of the initiatives that require the most financing can, in the long term, generate a return. In this way, the state can recoup its investments. This is the case for, among others, Power-to-X, development and upscaling of biorefining and development of new materials.

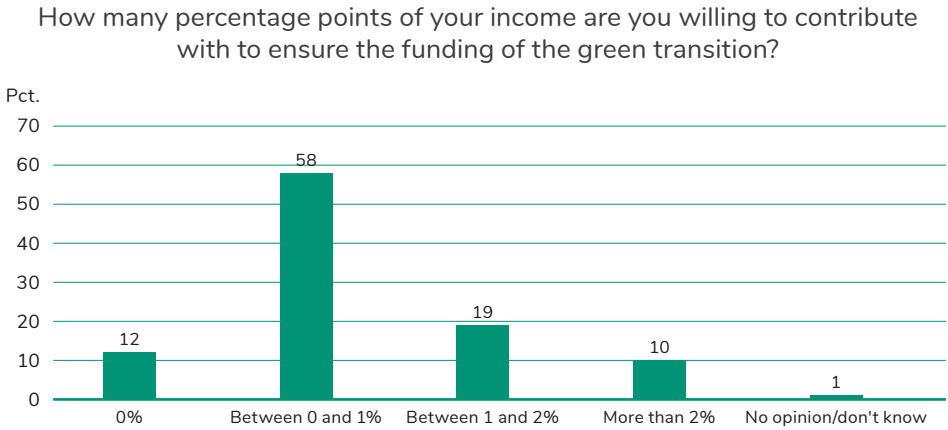
Finally, the credit rating of the Danish state and the low level of debt must be used as a stepping stone to provide the Green Investment Fund, KommuneKredit and other state funding schemes with a bigger mandate and scope of action in their daily work - to the benefit of the green transition in private and public companies and institutions.

### Repatriation of EU funds

At the EU level, there are a number of possibilities for financing climate efforts in Denmark, including in the field of research (Horizon), agriculture (The EU's Common Agricultural Policy) and environment and climate (LIFE). Today, Danish ministries and other players already work hard to repatriate funds, but the work will be even more important in the future in light of the large investment need required to meet the 2030 target. The government



**Figure 18: Willingness to contribute through income tax**



**Source:** FH's work-life survey, 2020.

**Note:** 2,579 respondents.

must therefore establish a unit to facilitate the repatriation of EU funds by ensuring an overview of the financing possibilities, an overall strategy and even better opportunities for entrepreneurs, companies, researchers and authorities. This initiative should also be in the interest of the EU system as better projects from the individual member states ensure that the EU funds have a greater effect.

### Financing through income tax

Even after the above initiatives have been brought into play, a financing gap may remain. This can be the case for specific investments towards 2030 and permanent additional costs in connection with the continuation of initiatives after 2030, including the operation of platforms, export initiatives and climate accounts, as well as revenue loss. The financing gap can make it necessary to consider financing through income tax. There are a number of advantages related to income tax, including a progressive distribution of the burden and a steady income that allows for financing of recurring costs and revenue loss. At the same time, however, income tax also has downsides. It is a burden on the taxpayers and reduces the supply of labour. Figure 18

In 2019, Holland raised almost DKK

45

bn by offering green bonds

shows a certain willingness for income tax financing among Danish workers: 58% are willing to contribute with 0-1% through income tax in order to ensure financing of the green transition.

FH is open to the idea of financing a part of a coming climate action plan by means of income tax if the financing challenge cannot be solved through sources, including, for example, carbon taxes, mobilisation of private financing, loan financing and financing from Denmark's Green Future Fund and Kommune-Kredit. This principle is intended to ensure that other instruments are given priority and are exhausted before income tax financing is used.

**Worker participation  
helps companies and  
their transition**

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Workers often have specific knowledge on how to save materials, electricity and heat. This knowledge must be harvested. It can, among other things, contribute to the transition to a circular economy which requires new ways of thinking and business models, and in the development of green and socially sustainable procurement and tendering.

According to FH's survey, in the past five years, 37% of the respondents have experienced that their workplace has used their green proposals to reduce greenhouse gas emissions. As shown in figure 19, there are many who experience that the green proposals have other benefits than just emissions reductions – they also reduce waste, increase recycling and costs. There are many side benefits<sup>20</sup>.

Figure 19 also shows that green proposals have improved health and safety at work in many instances. In addition to contributing to reduce emissions and consumption of materials, worker participation can therefore also contribute to improved health and safety

at work and – as it can be expected – a greater sense of ownership of the green transition at the workplace.

### Knowledge and capacity

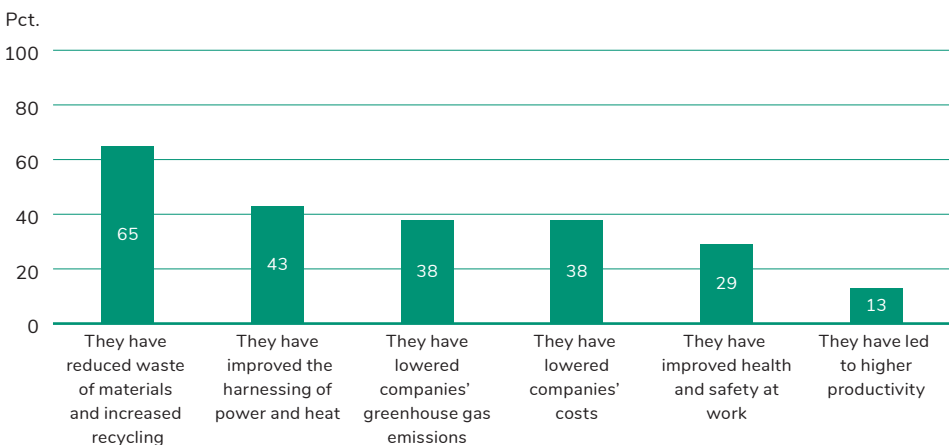
A barrier to worker participation can be that the company or the individual worker has limited information about, for example, the carbon footprint of production or which possibilities there are to reduce it. In fact, the Climate Partnership for Production has found that only 11% of workers know the greenhouse gas emissions of their company. Figure 20 shows that this challenge is, not surprisingly, greatest among smaller companies.

With such limited knowledge, it becomes difficult to come up with green ideas.

### FH's climate proposals are levers

A number of FH's proposals in the preceding chapters can strengthen knowledge and capacity, thereby creating better preconditions for worker participation. This applies to, among others, 125% technology deductions for SMEs, the development of standardized tools

**Figure 19: How green proposals help**



**Source:** FH's work-life survey, 2020.

**Note:** 935 respondents replied 'very much' and 'to some extent' when asked if their workplace has used the green proposals from the employees.

<sup>20</sup> See "More Green Jobs - an inspirational catalogue for a green transition and more jobs through worker participation and local cooperation LO", 2014

for companies and demonstration and knowledge-sharing in the building & construction sector. Worker participation should be incorporated into these and other initiatives.

At the same time, worker participation should be strengthened through other initiatives, in both the private and public sectors.

### Worker participation in the private and public sectors

The green transition and meeting the requirements and guidelines in the coming climate plans will require new innovative solutions in both the private and the public sectors.

In the private sector, a strengthened cooperation between workers and management on the green transition was part of most collective agreements during the collective bargaining round in 2020. In the public sector, the involvement of knowledge and suggestions from the workers can contribute to the phasing in of green and socially sustainable public procurement and tenders, as proposed by FH above.

An analysis from the National Centre for Public Sector Innovation (COI) shows that in 92% of public innovations, the workers play a key role. The innovation skills of workers should be targeted to develop green solutions,

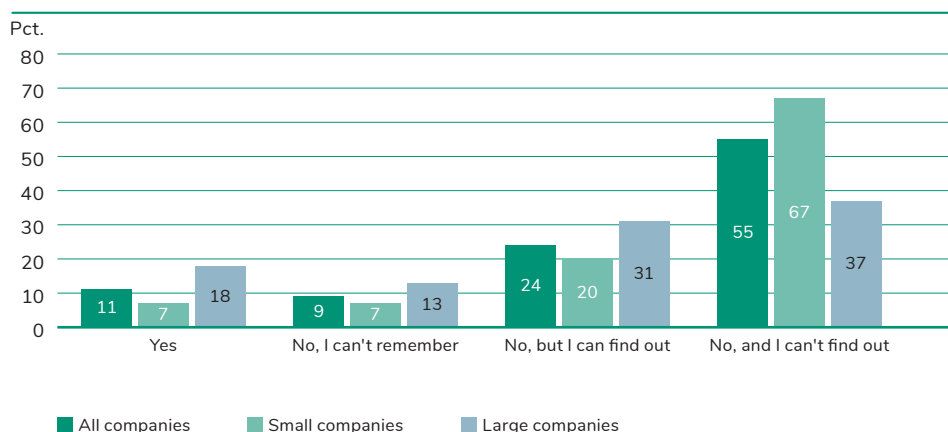
among other things by giving COI a separate focus on climate and funds to launch projects and knowledge-sharing or within the framework of new knowledge- and information centres.

Support should be granted to workplaces to become certified in energy management systems, including the help of guidance and benchmarking from the Business Guide at virksomhedsguiden.dk and the Business Hubs (Erhvervshusene). Specific goals and action plans, energy working groups with representatives from other occupational groups or 'idea competitions' are all initiatives that can be implemented at the workplaces. It would be useful to include certification costs in the extended research- and innovation allowance.

### FH will establish an "Worker Panel on Climate Change"

FH must also lead the way. We want to contribute to worker participation in the green transition and to develop good ways to use the ideas of Danish workers. FH will therefore establish an "Worker's Panel on Climate Change" consisting of workers who, in their jobs, work to promote the green transition as well as other experts. At the same time, FH's youth fund will continue to fund activities that aim to promote the green transition, just as we have done in 2020.

Figure 20: Knowledge of the company's emissions



Source: The Climate Partnership for the Manufacturing Industry.

Note: 471 replies from among 2,441 respondents.

# FH proposes

90. Workers and public leaders must be green drivers of innovation
91. Workplaces should be supported in becoming certified in energy management systems (such as ISO 50001)
92. FH will establish a “Worker’s Panel on Climate Change”
93. FH will involve young trade unionists in the green transition

**Green jobs -  
with a a safe and  
healthy work environment**

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Figure 21: Health and safety risks

<p><b>Traditional jobs</b></p>  <p><b>Green jobs</b></p>	<p><b>What we know we know</b></p> <p><b>Building and construction:</b></p> <ul style="list-style-type: none"> <li>• Energy renovation can expose workers to the harmful effects of asbestos and dust, for example.</li> <li>• Major infrastructure projects lead to risks such as accidents.</li> </ul> <p><b>Recycling and waste sorting:</b></p> <ul style="list-style-type: none"> <li>• Exposes workers to biological agents and dangerous chemicals.</li> </ul> <p><b>Wind energy:</b></p> <ul style="list-style-type: none"> <li>• Accident- and ergonomic risks in connection with the installation of wind turbines.</li> <li>• Chemical risks (isocyanates, styrene and epoxy, for example) in connection with the production of wind turbines.</li> </ul>	<p><b>What we know we don't know</b></p> <p><b>The energy sector:</b></p> <ul style="list-style-type: none"> <li>• Risks due to increased use and installation of solar panels.</li> </ul> <p><b>Agriculture:</b></p> <ul style="list-style-type: none"> <li>• Risks in connection with new products and practises.</li> </ul>
	<p><b>What we know we don't know</b></p> <ul style="list-style-type: none"> <li>• Risks in connection with recycling, for example, have been identified in some industries, but there is not, as of yet, any knowledge of transferability to others.</li> <li>• The offshore industry's knowledge on safety culture and safety management could, possibly, be transferred to the wind turbine industry and major construction projects.</li> </ul>	<p><b>What we don't know we don't know</b></p> <ul style="list-style-type: none"> <li>• New risks emerge as a consequence of new practises, new aids, new products or a different work organisation.</li> </ul>

Danish workers have a positive outlook on the effects of the green transition on their jobs. Figure 3 demonstrated that 37% expect a positive effect on their occupation while only 7% expect a negative effect. Of the workers who expect that the green transition will have positive effects, approximately half of them expect that it will improve health and safety at work.

However, at good working environment is not achieved without an effort. It must be actively integrated as a perspective of the transition. Both at the society level and at the workplace level.

**Known and unknown risks**

The green transition and a good working environment can and must go hand in hand. We must promote and use the potentials to promote

health and safety at work and we must prevent and avoid health and safety risks.

With the new green jobs, the need for preventing the “classic physical health and safety problems” becomes relevant again since many climate initiatives are very much expected to lead to growth in green manufacturing industries. This requires increased and renewed attention to physical health and safety issues as in connection with hard physical labour, workplace accidents and exposure to chemicals.

In addition to this, it is expected that green jobs have unknown risks that we will only learn about as the green transition moves forward. The use of new substances and new materials will entail new and yet unknown problems. Therefore, an increased and renewed attention to already known problems is not sufficient.

Figure 21 illustrates how new green jobs bring attention to both the need to focus on classic health and safety problem and open up to new risk factors that need to be prevented.

The green transition will affect all professions. The following paragraphs will provide four examples of areas that will grow and which require particular attention to health and safety at work.

### Expansion of wind energy

In connection with a coming expansion of the wind power sector, there will be a particular need to prevent serious workplace accidents, as experience shows a risk of - both in connection with the production of towers and blades and in connection with the installation of wind turbines - not least offshore.

Research shows that a good health and safety culture is crucial. There is therefore a need to prevent musculoskeletal disorders (MSD) due to heavy work with heavy lifting and awkward postures. Finally, there will be need for special attention to the uses of isocyanates and epoxy, which have been causing major problems with allergies and eczema among the workers in Danish wind turbine factories.

### Energy efficiency measures, buildings and construction

In connection with the renovation of older buildings and energy efficiency measures on public housing, attention must be paid to preventing the known risk factors in the building and construction sector. These are risks such as workplace accidents, falls and risks in connection with heavy work, heavy lifting and awkward postures, and when it comes to well-known problems with asbestos, PCB, lead and insulating compounds in the older public stock of buildings.

### Recycling and sorting of waste

FH proposes a commitment to the circular economy. And fortunately, this is already gaining traction. As described, the circular economy is about moving from linear production to methods of production where materials are maintained in a circuit and the need for new raw materials is reduced.

This is seen in waste management, for example. Here, the circuit approach is increasingly used with inspiration from the “cradle-to-cradle” -concept. All waste products are considered as possible starting points for new production. With the EU’s targets for recycling 60% of the waste, we can expect to see a steep rise in the number of people employed in waste sorting.

Waste sorting and recycling are beneficial seen from a green sustainability perspective, but we also need to ensure that it is safe and healthy to work with. Some risks are already known to us. We know that waste sorting involves the risk of exposure to biological agents, including micro-organisms which can, among others, lead to respiratory disorders, gastrointestinal disorders, eczema and allergies. We also know that exposure to heavy metals, among others in connection with recycling, can cause cancer and damage the nervous system. In this way, workers in a British company were exposed to mercury poisoning when working on the separation and recycling parts from fluorescent light bulbs.

There is a need for increased attention to be paid to which products we recycle and how. Here, the focus should be on how the products are designed and manufactured with a view to ensuring “safe and healthy” recycling.

### New technologies and materials

New technologies and new materials, such as nanotechnology, involve unknown risks. As more and more electric cars and hybrid cars come into circulation, new health and safety challenges will emerge. Exposed wires, water in the car or fire in the battery in electric cars and hybrid cars involve entirely different risks than those we know from fossil fuel cars. For example, it is far from risk-free for medics to cut an injured person out of an electric car.

### Enhanced efforts and requirements

Based on the above, FH proposes the initiatives summed up in box 14. Better monitoring, guidelines, coordination and incorporation of requirements in a number of areas are to ensure that the green transition does not just create more jobs but also good jobs.



# FH proposes

- 94.** Monitoring health and safety at work in connection with the green transition and new green jobs
- 95.** *New and revised guidelines for safeguarding health and safety at work in connection with the green transition from the professional branches for health and safety at work*
- 96.** *Coordinated initiatives between the National Working Environment Authority and the Working Environment Councils in selected green industries*
- 97.** *Research into new health and safety challenges in connection with the green transition, including whether current rules are up-to-date and whether there are possibilities for substitution of dangerous substances*
- 98.** *Requirements for worker participation in product and process design*
- 99.** *Requirements for health and safety standards in tendering of major green projects*
- 100.** *Incorporating occupational health and safety indicators and concerns into the work with the UN Sustainable Development Goals - particularly when it comes to the goal on “good health and well-being”*
- 101.** *Increased focus on a safety and prevention culture in green jobs with a view to preventing workplace accidents and health hazards*

Training and skills  
development is needed  
for the green transition

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The green transition can create at least 200,000 full-time equivalents, as described above. It is specific work which is to be carried out and which involves the need for new skills. This applies to employed as well as unemployed persons, as described in the chapter on skills development. Training and skills development will, therefore, be crucial to the green transition. It is especially important that the education and training system, including continuing- and further education programmes, is able to react quickly and match the new skills in demand on the labour market.

The climate solutions that will help us achieve our 2030 and 2050 goals will, at the end of the day, be implemented by people. Therefore, just as we take into account the green transition in construction and afforestation projects today, we need to take into account the green transition when we do training and education. Training and education must be upgraded in light of the transition.

When further- and continuing education and training provides the individual worker with better opportunities for contributing actively to the transition through the implementation of new technologies and the development of new solutions, it can also give the worker a greater sense of ownership and involvement. In the end, this can be crucial to the support for the green transition.

FH's survey shows that nine in ten workers are willing to use a new technology as part of their jobs. At the same time, two in three workers expect that the green transition will affect their job situation to such an extent that further- and continuing training and education will be necessary. The education system must, however, also be ready to quickly absorb the requirements for new skills required in the transition. FH therefore proposes the initiatives that are summed up in box 15.

### **Striking a balance between technology and worker skills**

New technologies and innovative solutions will play a key role in the green transition. For example, they could be in the form of climate-friendly materials, dietary changes and new hydrogen technologies in connection with Power-to-X. Just as the digital transition, the green transition is about new technologies and new ways of thinking and working. And it involves everyone in the Danish society. The green transition includes the performance of tasks in every industry in both public and private companies.

It is important to strike a balance whereby investments into new technologies are combined with new worker skills. The two must go hand in hand. This balance will ensure that workers are prepared to use and work with the new technologies.

At the same time, a balance whereby new worker skills accompany the development in technology will provide the best possible basis for developing new and innovative solutions. This can contribute to the new green solutions in the long term and thereby the transition towards 2050, just as it can contribute to exports and employment.

### **Key green skills**

The tech skills that are needed at first hand, such as the specific skills to install a heat pump or to repair an electric car, are important. However, they cannot stand alone – especially if training is to fully underpin involvement, a sense of ownership of the transition and development of the new solutions that are to assist us towards 2050.

Attention should, in all industries, be given to the development of training and education and skills that give the workers an understanding of sustainable development, resource-efficiency and environmental protection. The basis for this should be solid basic skills in the occupational field of the individual worker.

Finally, it is important also to focus on cognitive and social skills.

### A coherent and flexible education system

It is not possible to predict the many different job types and specific skills that the green transition will entail and require. Meanwhile, it is certain that the need for new skills will place big demands on both the ordinary education system as well as the further- and continuing training and education system.

It is therefore crucial that we have an education system, including a further- and continuing training and education system, and a support system that is flexible, without barriers, and which is coherent and foreseeable for the ones who need to use it so that young people and workers can quickly be trained, upskilled or retrained for the green jobs when they emerge.

This is important because it must be possible for the individual to continuously and throughout the entire working life combine employment, work-based learning and further- and continuing training and education.

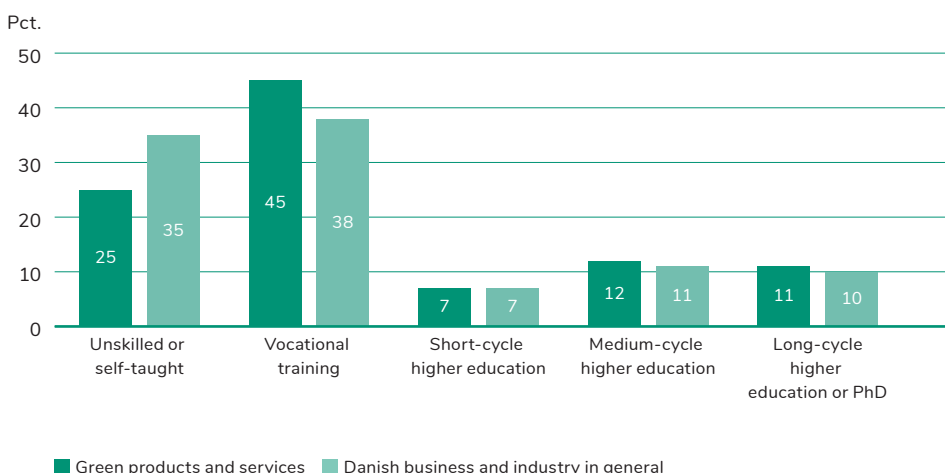
### Invest in training and education

In order to support the above, investments into the green transition should include investments into education and training. This applies to investments into the entire Danish education system from primary schools to further education and training, but not least training and education where work-linked training and vocational training constitute the pivotal point and where the practical skills are in focus.

There are two reasons for this. Firstly, it is mainly skilled workers and workers with “skills to act” who will be working in different ways. Secondly, ideas for new green solutions often come from the workers who work in professions or trades on an every day basis – as described in the chapter on worker participation above.

Figure 22 show that workers who have undergone vocational training have a tendency to work in “green goods and services” to a greater extent than people with other educational backgrounds. On this basis, we can expect that the skilled workers will, also in future, play a key role in producing “green products and services”.

**Figure 22: Educational composition in the production of green goods and services**



**Source:** Concito, Den danske grønne beskæftigelse, 2019.

**Note:** Estimates based on excerpts from Statistics Denmark from DAMVAD (2018) for CONCITO.

# FH proposes

- 102.** *In all industries, attention should be given to striking a balance between investments in new technology and training/skills development*
- 103.** *The focus should not just be on technical skills but also on understanding, basic skills and cognitive and social skills*
- 104.** *The training and support system must be coherent and flexible so that everyone can participate throughout their working lives*
- 105.** *Invest in training and education*
- 106.** *Companies must systematize adult education and continuing training by means of systematic educational planning*

There is thus a need for a special effort in order to ensure, in particular, that workers in those sectors that are to contribute to implement the green transition also have the skills to be a driving force in that development. Today, many do not have, for example, basic skills in Danish, mathematics, English and digital skills. This should be remedied since adequate basic skills and competencies are a prerequisite for acquiring new skills.

### **Systematic educational planning is the way forward**

FH's analyses show that far more workers will embark on continuing education and training

if their employers systematize it by means more continuous of and systematic educational planning.

Where their management creates a framework and a culture for continuing education and training, workers want to undergo continuing training in workplaces. Consequently, more public and private companies must be motivated to work more systematically with the planning of adult education and continuing training so that the educational planning is taken just as seriously as the annual holiday planning etc.

Skills development  
of the unemployed  
will help the individual  
and support the transition

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The green transition towards 2030 and 2050 will be a long haul. It will bring new job functions while others will disappear. 23% of the respondents fear that their skills will not be in demand due to the green transition. That is a large number.

It is important that the unemployed are not excluded from the development but that they benefit from the new jobs that emerge. Both for their own sake and because experiences with new opportunities and good living conditions contribute to ensuring broad support for the green transition. To ensure this, there is a need for skills development.

It is also important for companies that there are good opportunities for those who are unemployed. If some of the thousands of unemployed can fill jobs after having completed skills development, this would reduce the risk of shortages of specific groups of workers. At the same time, skills

# 23%

of respondents fear that their skills will not be in demand due to the green transition

development can help ensure both a skilled workforce, an increased supply of labour and more people gaining a more permanent foothold on the labour market.

#### Skills at the forefront

If the unemployed are to have opportunities and be able to fill the new jobs, they need to learn some of the skills that companies will require for the green transition. As many as 65% believe that better opportunities for training and continuing education is the best way to provide security for the ones who need to find a new job due to the green transition.





## The Danish educational and skills development system must be strengthened in general, simplified and made more flexible

Extensive efforts should therefore be launched to upskill the unemployed so that they can fill the new jobs and have the skills that these jobs require. For example, this could be to provide continuing education and training to craftsmen to equip them to install and maintain heat pumps, solar heating systems etc.

### Flexibility is key

The green transition can create many different types of jobs and skills but these are hard to predict with precision. The transition to new and so far unknown ways of production is at the centre of the circular economy, for example.

It is therefore crucial that the Danish educational- and skills development system is strengthened in generally and made more flexible and simpler so that the unemployed can quickly be upskilled to fill the green jobs when they emerge. In this way, the skills of the unemployed will not become a bottleneck but rather a catalyst for the green transition.

### Skills development increases employment and reduces inequality

FH has analysed the socio-economic effects of specific training and education and skills development for unskilled workers in particular. This analysis clearly shows, that even though this would cause a marginal drop in employment in the short term, employment would rise markedly in the longer term and

inequality would be reduced. Training and education and skills development for the unemployed should therefore be given high priority.

If the skills development of the unemployed is to be successful - to the benefit of both the climate and society - it is necessary that there are good opportunities for and rights to develop one's skills as an individual - both during the notice period and when unemployed.

It is also central that red tape or lack of access do not obstruct training and skills development for the unemployed. This goes for citizens, civil servants as well as companies. This requires simple rules and easier access to knowledge on training and education and skills development offers.

There is already a number of good skills development tools among the existing employment initiatives. Many of them have never really been put to use or been widely used.

FH therefore proposes that a number of the existing tools are strengthened, since they will contribute to ensuring the green skills that are sought after by the companies. FH's proposal is summed up in box 16.

# FH proposes

- 107.** A new start when it comes to boosting training and education, including a new rate, better information and basic training, better coherence with the education system and simplifications
- 108.** Focus on the regional work and the role of the social partners, including more funds for vocational training courses that can open doors to jobs in the green transition
- 109.** A revival of job rotation, including economic improvements for citizens, municipalities and companies etc.
- 110.** A simpler and stronger system for adult apprentices, including simplifications of rates and target groups as well as better coherence with the unemployment benefit system etc.
- 111.** Change of tracks: It must be easier to embark on a new education or training programme that is relevant to the green transition if one's training is obsolete
- 112.** The right to six weeks' job-focused education, including an earlier start and a better transition from the notice period

# A secure labour market - for a just green transition

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The green transition will benefit the climate and holds possibilities for Denmark and workers in general: More exports, higher employment and better jobs.

As the same time, however, the transition increases the need for labour market security. Some risk becoming negatively affected as job functions disappear. Others will need the courage to embark on new trainings and projects. Both of these groups must be supported through an effort to increase security. This will not only benefit the individual worker – it will also strengthen general support for the green transition towards 2030 and 2050.

### Security for those who are negatively affected

Meeting the 2030 target for a 70% emissions reduction, and subsequently the 2050 target of climate neutrality, requires a transition of many activities in many sectors. As described in the chapter on circular economy, we need to find new ways of producing and consuming.

When we develop and disseminate climate-friendly materials, electric cars and heat pumps, this is ultimately to replace goods and technologies that are based on fossil fuels. This can result

in the loss of some job functions, and this carries the risk of affecting people negatively. The transition is not just about climate. It is also about those people and their living conditions, incomes, homes and families.

There must be security on the labour market. We should not protect job functions, but we must protect the people who occupy them.

### Security will promote development

Greater security will not just benefit those who risk being negatively affected by losing existing job functions. It can also boost the morale of those who consider a new type of training or business project in spite of an uncertain outlook. They must enjoy security on the labour market so that they are more willing to take risks. Because in five or ten years, the skills and new projects they embark on now may be the ones that form the basis for the new solutions that are needed.

### Security will promote support

Social justice is necessary in order to ensure long-term support for the green transition. There will be bumps along the way towards 2030 and 2050. The corona crisis has already taught us this.

Figure 23: Development in the wage compensation rate for an FH-employee



Source: The family type model used by the Danish Ministry of Finance and FH's calculations.

Note: The gross wage compensation rate is calculated on the basis of the wage development of ordinary employees without managerial responsibility and the development in the maximum unemployment benefit rate. The net wage compensation rate is calculated on the basis of the same figures for wages and unemployment benefits based on the disposable income after tax.

# FH proposes

**113.** *In the future, unemployment benefits should be adjusted according to the development in wages so they don't lose value*

When crises come along, it is important that the support for the green transition is robust. And it will only be robust if it is experienced as being socially just - as a lever, not as an added threat or something that needs to be paused.

### **Focus on flexicurity and unemployment benefits**

The transition's consequences for employment, skills and financial security must be addressed by means of a combination of security, transformation of skills and flexibility. In other words: Flexicurity.

The single most important element in this connection is unemployment benefits. They must protect the workers who risk losing their jobs and the ones who are contemplating a road with uncertain employment prospects. Higher unemployment benefit compensation for loss of earnings would provide greater security.

### **The unemployment benefit system must be improved**

The wage compensation rate reflects the economic difference between being employed and unemployed. As shown in figure 23, the gross compensation rate has dropped from 57% in the mid-1990s to 48% today. With expected reductions, the gross compensation rate will drop further to approximately 45%.

It is crucial for the individual worker and the support for the transition that the unemployment benefit system is rectified and that the past 30 years of hollowing out the unemployment benefits is brought to a stop.

Furthermore, there is a pressing challenge due to the corona crisis. Many workers have lost their jobs as a direct consequence of the corona crisis, while others have kept their incomes because their employers have made use of crisis packages. Just as the crisis packages are now protecting companies and those in employment, there is also a need for a rescue package to protect the unemployed who have loyally paid their membership fees to their unemployment insurance fund. It is unfair that the ones who are most severely affected by the crisis by having lost their jobs, do not receive a helping hand in the form of economic assistance.

In FH's economic recovery plan "Invest in climate, technology and security" we propose an emergency relief package for the unemployment benefit system. This includes a temporary corona allowance to supplement the unemployment benefit rate and easier eligibility rules for freelancers and solo self-employed and that people who have yet not accrued entitlement to unemployment benefit will have access to the system through a lower rate.

## FH's members

- 3F - The United Federation of Danish Workers
- HK/Denmark - The Union of Commercial and Clerical Employees in Denmark
- FOA - Trade and Labour
- The Danish Metal Workers' Union
- The Danish Union of Teachers
- The Danish Nurses' Organization
- The Danish Union of Early Childhood and Youth Educators
- The National Federation of Social Educators
- NNF - The Danish Food and Allied Workers' Union
- The Danish Union of Electricians
- The Danish Association of Professional Technicians
- The Danish Police Union
- The National Union of Service Employees
- The Danish Association of Social Workers
- The Association of Computer Professionals
- The Teachers' Union for Danish Independent Schools
- The aviation- and railway workers' association
- Union of Education Denmark
- The Danish Union of Plumbers and Allied Workers
- The Central Association of Armed Forces Personnel
- The Insurance Workers' Association
- The Danish Diet & Nutrition Association
- The Danish Painters' Union
- Danish Bioanalysts
- The Danish Customs & Taxation Confederation
- The Danish Musicians' Union
- The Danish Association of Pharmaconomists
- The Union of Enlisted Privates and Corporals in the Danish Army
- The Danish Prison Officers' Union
- Radiographers' Council
- The Danish Actors' Association
- The Danish Association of Dental Hygienists
- The Association of Danish Podiatrists
- The Danish Football Players' Association
- The Danish Artists' Union
- The Agricultural Technicians' Union
- The Civil Servants' Union
- Cabin Union Denmark
- The Danish Foremen's Union
- The Danish Association of Psychomotricity
- FAF - The Film and TV workers' union
- Attorfillit Kattuffiat
- TAT - The Association of Technical and Administrative Officials
- The Danish Forest and Landscape Engineers' Association
- KLF - The Association of Map and Surveying Technicians
- The Danish association of parish clerks
- The Traffic League
- The Organists' Association
- Frederiksberg Municipal Association
- The Danish Handball Players' Association
- Gentofte Municipal Association
- HI
- DOBL - Public Emergency Preparedness Association
- Kirkekultur.nu
- Danish Church Music Association
- Danish Radio Media Association
- The Prisons Association
- The Association of Danish Inseminators
- The Danish Athletes Association
- The Association of Danish Cemetery Managers
- The Association of Parliamentary Servants
- Viften - Employees in the Danish Parliament
- The Association of Court Employees
- The Danish Association of Prosthetists and Orthotists

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