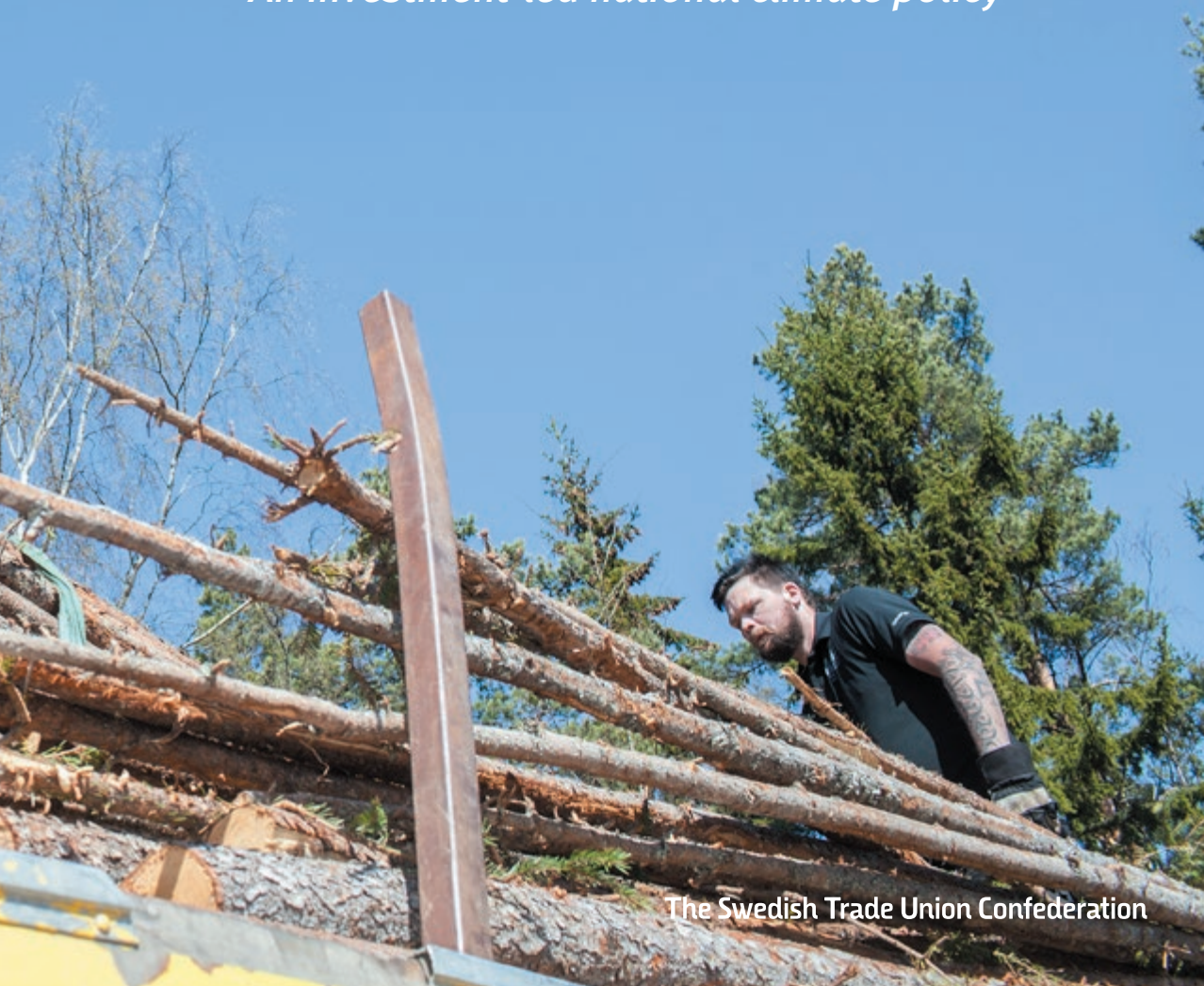
ENVIRONMENT AND CLIMATE

The Swedish Trade Union Confederation (LO) Environmental and climate policy programme

An investment-led national climate policy



The Swedish Trade Union Confederation

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Preface

THE INTERNATIONAL TRADE UNION movement has long worked towards consensus among all countries of the world to keep the increase in average global temperature below two degrees. After decades of international negotiations, the Climate Summit in Paris in 2015 took a decisive step in this direction. The Paris Agreement has been in place since 2016. It states that the countries of the world must endeavour to hold the increase in the global average temperature to well below two degrees Celsius and pursue efforts to limit the temperature increase to 1.5 degrees Celsius.

To achieve the Paris targets, all countries must themselves take measures and reduce their emissions to sustainable levels. No country alone can solve the climate problem and nor can any country opt out. The quantity of greenhouse gases in the atmosphere is already such that global emissions must start to fall in 2020 and then gradually approach zero by the mid-2000s. Though it is employers who decide on how production is to be carried out, the joint efforts of the global trade union movement to reduce emissions is a crucial force for achieving this. The trade union movement has always been a strong and important social movement. Just as we changed production processes through trade union work to create sustainable working environments, we can use our power to create a sustainable external environment.

To realise the Paris Agreement there must be a just transition. Over a period of time major investments in transition and development will be required. These investments will make it possible to continue to maintain an environment with the living conditions we know today. However, if we refrain from this transition we will need to pay many times more over an indefinite period in the future to deal with the problems and damage a changed climate entails. Put simply: We can use a limited part of our resources for a shorter period to retain the living conditions we have got used to, or for an incalculable period we will need to invest many times more to deal with all the problems that follow in the wake of climate change.

This programme is mainly focused on measures to adapt and make Sweden sustainable from a climate perspective. From an international perspective Sweden's emissions are marginal. This is mainly because we have fewer inhabitants, but also because emissions from Sweden are lower per capita than many other industrialised countries. It is also of great importance that, unlike many other countries, we have almost fossil-free electricity generation. This does not mean that it is of no interest what we do in our country. In the first place, our emissions are not low enough to comply with the Paris Agreement. If we are to convince other countries to reduce their emissions, our emissions per capita cannot be higher than is required from a global perspective. In the second place, we are a rich country with great technological know-how. Consequently, we can invest in climate technology and produce solutions that many other countries with similar emission problems may want to import so as to comply with the Paris Agreement.

LO's climate policy is aimed at reducing Sweden's emissions so that they are on a level with what is necessary for Sweden to comply with the Paris Agreement. It also aims to develop climate-friendly technologies, products and services that make it easy and natural to have a climate-smart lifestyle in Sweden. In addition, by being at the forefront of the transition, Sweden can develop new export products. In that way we are following the tradition that in the 1900s gave Sweden's economy a boost so it could grow to be one of the world's strongest. Investing in bio-economics also makes it possible to increase the number of jobs and strengthen the economy in rural areas of Sweden. Apart from a sustainable climate policy, Sweden also has much to gain from making the adaptations that LO advocates in this programme.

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1. Background to the need for more climate action

AN INCREASING NUMBER of research findings and events in the rest of the world in the form of storms, floods, heatwaves and melting ice, show that the countries of the world need to tighten up their climate policies. An effective climate policy involves costs, but the cost of not making necessary investments is estimated to be far higher. Limiting the global increase in temperature is estimated as one per cent of total global GDP to 2050 in the Stern Review Report. This assumes a rapid transition to reduced greenhouse gas emissions. If the increase in temperature is allowed to continue, costs will rise to between five and twenty per cent of total global GDP indefinitely.

The increasing pace of technological development, for example cheaper renewable energy and battery solutions, inspires hope. But extensive political initiatives will be needed to drive development, both as regards the extent and the speed of transition. Without political incentives for climate smart systems for material and energy supply, transport, green industries and construction, the world will not be able to meet the climate challenge.

Climate change affects human health, working and living conditions. Threats to livelihood and survival are among the reasons for the refugee flows we are already seeing. These migrations from areas where it is increasingly difficult to make a living may be many times greater unless climate change is halted. Unfortunately we are already facing inevitable climate consequences such as rises in sea levels. That is why climate change adaptation must also be started on a large scale. The UN Green Climate Fund is to provide USD 100 billion annually from 2020 for this purpose in developing countries. Since emissions now and historically have come from the rich countries, a corresponding economic mobilisation is necessary to make them fossil-free and reduce their environmental and climate impact.

If we are to succeed in achieving the sustainability goals outlined in the UN 2030 Agenda for Sustainable Development climate change must

be addressed. The International Trade Union Confederation (ITUC) is therefore actively working to realise a global climate agreement as well as the UN's new sustainable development goals. This requires a considerably higher level of political ambition and rate of transition than we see today. In parallel with this, the world's trade union organisations are calling for a just transition. Everyone will benefit from keeping the rise in temperature well below two degrees and so we must share the costs of transition. In the short term some jobs may be threatened, but on the other hand, climate and sustainability transition entails such major restructuring projects that this will create a lot of jobs. The option to continue on the existing path simply does not exist. "There are no jobs on a dead planet," as the ITUC slogan stated ahead of the climate change meeting in Paris.

Climate and sustainability oriented investment and training can provide both existing and emerging companies with new business opportunities. In that way both today's and tomorrow's workforce can find jobs that will last into the future. The ITUC's exhortation to create "green decent jobs", in other words jobs that are ecologically, socially and economically sustainable, means that jobs should be resource-efficient with low environmental impact, have a good work environment, decent conditions with a high level of own influence and a living wage.

With the Paris Agreement it is reasonable to expect increased international demand for both climate-friendly goods and products and climate technology solutions. Being at the forefront of their development also creates good conditions for offering them on an international market.

The sectors that contribute most to Swedish climate emissions

Transport and industrial production account for about a third each of Swedish climate emissions. The remaining third is caused by emissions from agriculture, waste incineration, work machines and a few other minor items. Most of our national climate impact is from ten sectors: agriculture, energy, shipping, steel, extra-urban traffic, cement, refineries, aircraft, construction, waste and chemicals. To reduce Sweden's climate impact it is therefore necessary to make major investments in adapting transport, construction and energy and materials supply.

Sweden's climate policy framework states that the national emissions are to be very low by 2045. This is an ambitious climate policy that

makes Sweden one of the leading countries in international evaluations in terms of targets set. LO believes that a progressive climate policy is necessary. Correctly designed, it would also develop both the economy and the regions of the country. Being a leader in the development may, however, be risky and in the worst case lead to manufacturing and emissions relocating abroad. To prevent this, a policy is needed that not only limits activities in Sweden that are dangerous for the environment and the climate, but also stimulates the growth of new technology and resource-effective systemic solutions.

To succeed in this there must be effective climate policy initiatives – and these are the kind of initiatives LO proposes in this programme.

A Swedish climate policy that is effective at home and away

LO sees the need for national commitments to reduce global climate emissions in line with national environmental goals, the Paris Agreement, the EU's long-term climate goals and the UN sustainable development goals. If Sweden is to effectively participate in achieving these goals, there must be a shift to a more investment-led climate policy. The investments should focus on areas that have an effective influence on global climate emissions and in addition can develop the country's international competitiveness, innovative capacity, as well as the ability of small and medium-sized enterprises to grow and reach new markets. Swedish climate policy initiatives can thus reduce emissions, contribute to the country's economic prosperity and increase employment throughout the country. It can enable new products and technology, as well as knowledge and systemic solutions, to be exported to other countries when they are also adapting.

Unfortunately, for some time Sweden has been living on old merits and investments made a long time ago. The truth is that climate emissions are no longer decreasing, but it is also evident within our infrastructure, in that many public services no longer function satisfactorily, as maintenance has been neglected and new investment is under-dimensioned. Sweden needs to earn new merits by modernising and developing public infrastructure. Above all, investment is needed to achieve sustainable transport and energy systems, as well as initiatives to make the industrial and construction sectors' materials supply sustainable.

2. Proposals for five areas of climate investment

LO CONSIDERS THAT Swedish climate policy needs to be developed. Taking the climate challenge seriously and building up the world's first fossil-free welfare nation requires several major and coherent investment initiatives. Minor tax changes and small selective initiatives neither have sufficient impact on the climate threat nor economic development capacity. In addition, investments are required that enable new public infrastructure for climate neutral materials supply and the construction sector, as well as a fossil-free energy and transport system. At the same time, society must be adapted to tolerate a changed climate. These investments include a modernisation of today's in several ways poorly maintained and under-dimensioned Swedish infrastructure and building stock.

At the same time, effective investment in reduced climate impact will be a showcase for Swedish companies to show the world Swedish technology and systemic solutions; an important boost to exporting these services and products when all other countries are to make similar transitions.

To reach their full potential and deliver the best results, the various initiatives need to strengthen each other. This kind of systemic thinking is in line with the interaction that has historically characterised and been successful for Sweden. Cooperation between the State, the business sector, research and social partners has led to both welfare expansion and technological development and Swedish company successes in both goods and services markets.

LO's climate policy programme highlights the need for an investment-led climate policy with examples of investments to promote development in five areas: materials management, energy, transport, bio-based products and construction. The purpose is to reduce emissions in the sectors where Sweden has its climate impact and propose measures where Sweden can benefit from its raw materials, its industrial structure and its skills to itself develop solutions and produce its goods and services.

Investments in circular materials and green cement

One of the investment initiatives proposed by LO concerns more circular materials management. Not least, it is important to be able to produce cement with radically lower climate emissions in Sweden. Cement in particular will be needed in great amounts to build necessary housing, infrastructure and climate change adaptation projects. In addition, Sweden has good access to many of the components that are most in demand for mixing in to new cement recipes. To stimulate innovation and technological development towards reduced climate impact, an obligation to have a smaller climate footprint could be imposed for public procurement. These requirements can preferably be used to build the infrastructure Sweden needs and make it possible for Sweden to take the lead in developing "green cement".

Investments in a climate smart energy system with solar, wind and hydrogen power

The second area for an investment-led climate policy concerns developing the energy system with more solar and wind power. LO also considers that investment in hydrogen production and infrastructure is important for the optimum functioning of the energy system. Apart from solving several important challenges for the electricity system, this kind of investment is beneficial for both the transport and industrial sectors' endeavours to be fossil-free.

The Energy Agreement provides a roadmap for controlled transition to a sustainable electricity system, with the ambition of achieving entirely renewable electricity generation by 2040. The intention of the agreement is that Sweden must have a robust electricity network with high security of supply and low environmental impact, and offer electricity at competitive prices. Hydropower and excellent wind conditions give Sweden favourable conditions for producing climate-smart electricity. The challenge includes balancing electricity supply and demand. For this to work, we need to build up systems for secure balancing of output in combined energy, transport and industrial systems.

In some periods solar and wind power produce more than the demand and in some periods less. To derive maximum benefit from renewable energy production, avoid electricity shortages and have the right output balance in the electricity system, it must be possible to store renewable energy. When there is an electricity surplus, hydrogen gas production

may perform a complementary function. At the same time, hydrogen gas is a contribution to the transport sector's endeavours to be fossil-free.

The industrial sector can also use hydrogen gas and thus avoid coal and coke. Reducing iron ore with hydrogen gas instead of coal is a very important step in climate adaptation. Sweden is uniquely equipped for this, since we have the purest iron ore and at the same time hydrogen gas here can be produced with climate smart energy. In that way we can achieve climate-friendly steel production, which can also promote the competitiveness of the Swedish steel industry. Industries that become fossil-free do not need to buy emission allowances in the European Emissions Trading System, thus avoiding that cost.

Through its own early development and investment in climate smart energy technology with associated systemic solutions, Sweden can at the same time produce new export products. The Paris Agreement means that global emissions may not exceed net zero in the second half of the 2000s. All the countries of the world will therefore before long need solutions that lead to very low or even negative emissions. By being at the forefront Sweden will be able to export climate-friendly solutions and contribute to global climate benefit.

Investments in a fossil-free transport system with more public transport

The transport sector causes most greenhouse gas emissions in Sweden. This is mainly due to extensive private motoring and large volumes of goods transport by road. That is, transport in vehicles that today are mainly run on fossil fuels. To reduce the environmental and climate impact, more transport needs to be by sea and rail as well as public transport. These means of transport are considerably more energy and climate efficient, but if Sweden is to meet its emission targets they must be run on fossil-free fuels.

To increase their transport share, climate efficient means of transport must be more effective and more accessible. LO therefore considers that major investments are needed in fossil-free buses, rail traffic in metropolitan areas and national railways. LO wants to update existing railway routes and build a high-speed track with a speed capacity of 320 km/h. Both commuting to work and long journeys are most climate-efficient by rail, and this also applies to goods transport. With a high-speed rail track

competition between goods and passenger trains for capacity will be reduced. The goods trains can then run on renovated existing routes, while longer passenger transport services can be run at a higher speed than at present. The train can also then compete with air transport on more routes. At the same time, labour market areas will be extended, since it will be possible to commute longer distances within reasonable time.

Both lorries and passenger cars will also continue to be our important means of transport. Some parts of the country will hardly either be offered satisfactory public transport and rail tracks will not be built to all places that various goods must be transported to or from. Infrastructure investments need to meet these needs as well. Equally, investments that promote fossil-free road vehicles are important.

LO believes that the transport sector's climate challenge requires major investments in research and development of renewably driven vehicle technology. For a fossil-free transport sector there must be electricity/batteries, hydrogen gas/fuel cells and biofuels. It also requires a developed infrastructure for energy distribution. Equally, new value chains are needed, that can effectively produce the energy needed for fossil-free transport.

Transport needs are also influenced by how towns and communities are designed. Town and community planning are therefore of great importance for how much and how far we need to travel and which means of transport are available. Digitalisation may also influence transport needs. By improving logistics efficiency, the amount of transport can be reduced and filling ratios can be improved. Digitalisation can also reduce the need to travel by means of improved opportunities to hold meetings and work remotely. Development of "the internet of things" may also reduce the need to travel.

Investments in bio-based industrial symbiosis and better conditions for the green industries to benefit the climate

To increase the contribution of the green industries to environmental and climate benefit, LO wants to promote the development of bio-based industrial symbiosis. This concerns both research and development to find new areas of use for bio-based raw materials and also creating value chains and economic frameworks that can make these products commercially viable.

The bio-industrial symbiosis networks can contribute new biofuels, replace fossil oil in the chemicals industry and enable circular materi-

al with unique characteristics for the construction and packaging industries, for example. The bio-industrial symbiosis networks can also supply us with healthy food additives and smart functionality for the pharmaceutical and finishing industries.

New incentive systems that reward sustainable agriculture are needed to benefit the future production capacity of the green industries. For example, increasing humus content increases both the fertility and water retention capacity of the land while binding more carbon. Long-term carbon sequestration in agriculture, forestry and for example wooden buildings should be possible to reward. Even other essential ecosystem services such as pollination, water purification and preservation of biological diversity should be rewarded.

Investments in increased wood construction to create jobs throughout the country while reducing climate emissions and the housing shortage

The fifth area in which LO proposes investments concerns increased use of wood for construction. Increased construction in wood not only benefits climate policy, but also regional and housing policy. A lot of housing construction is needed, as well as schools and homes for the elderly and service flats. There various kinds of wood structures can be used to advantage. The necessary modernisation and energy efficiency improvement of the housing stock in the "Million Homes Programme" can also benefit from using a greater percentage of bio-based material.

Even if the housing shortage is greatest in the towns, much of the construction-oriented wood industry is based in the forest counties. The economic and social benefit of increased construction of wooden buildings would therefor fall to both town and country. In addition, the amount of residual forestry products would increase, which could be used to produce biofuels, for example.

The climate footprint of wooden building construction is in itself smaller than that of alternative materials. Added to that is the temporary carbon sequestration in the frames. What grows in the ecosystem will also be most beneficial for the climate if it is used, given sustainable cultivation and that the parts of the ecosystems that must be safeguarded for environmental reasons are also protected.

3. The role of policy in the sustainability transition

LO BELIEVES THAT climate policy needs to be integrated with other policy areas. This would make it easier to deal with any conflict of objectives and create better conditions for effective investment and research initiatives. An investment-led climate policy can be combined with other policy areas such as industrial policy, regional, rural, forestry and agricultural policy, research and education policy, labour market policy, housing policy, integration policy, consumer policy and of course traffic, energy and environmental policy.

Progressive and well-balanced cooperation initiatives between the parties and policy have historically often been the key to Sweden's successful industrial and societal development history. LO would like Sweden to further develop its earlier successful policy for societal change with the aim of again becoming a technology leader and investment-oriented economy, this time with overtones of climate and sustainability in societal transition initiatives.

Without education initiatives there is a risk that climate and sustainability transition will stagnate

As regards skills provision, the public sector needs to take responsibility and ensure that there are education paths and places to meet the skills needs of a climate-friendly policy. Access to skills and skilled labour is a key issue for enabling major initiatives to grow to their full potential. A wide range of occupational skills will be necessary to enable climate-smart development.

This will also mean regional policy initiatives, since the investments proposed by LO concern all parts of the country, as well as many different sectors and occupations. There is currently a shortage of many skills at national level, and even more so regionally. To avoid bottlenecks there must be training and labour market initiatives – not least skills development – in the green industries, in the wood industry, the construction sector, in public transport, in all aspects of circular materials

management, but also for a climate-smarter energy sector and to electrify the transport sector.

Procurement requirements and other policy instruments that can usefully complement climate policy investments

Targeted societal change requires political frameworks. For example, through publicly financed investments and technology procurement new markets can more easily get started. For example, building of a unified infrastructure for electric car chargers may need such help. In other contexts, quota obligations and policy instruments in the form of taxes and subsidies are also needed. The intention is that what is sustainable and economically effective in the long-term will also be profitable in the short-term private and business economy. The market usually rewards what is cheapest for the producer or consumer. If the market is to reward what is effective for the national economy, policy is often also necessary. Environmental and climate labelling, which may be initiated by the market or policy, is one such tool that facilitates choices that are better for the environment and the climate. When these labels are linked to procurement requirements, they become genuinely effective.

With the help of public procurement, new climate-smart products such as green cement can find an important first customer. All the initiatives proposed by LO can have a faster and greater impact via public procurement, with faster emission reductions as a consequence. There are many good Swedish and EU examples of this, including Swedish manuals for green procurement and climate requirements for vehicles, fuel and transport in public procurement. At EU level there are corresponding initiatives for "Green Public Procurement".

4. The social dimension of the transition

SOCIETAL CHANGES NEED to be set up so that no-one is left to fend for themselves. Social accountability is also necessary to achieve the legitimacy and participation required for a transition. The trade unions have historically acted as guarantor for implementing societal changes at a rate that allows everyone to keep up, and ensuring that everything is done correctly so that no workers ultimately lose out. For example, the social dimension in the sustainability transition must include policies for the export sectors' capacity to develop international competitiveness and favourable transition opportunities. This also includes good financial security for those who may have to change career path. There must also be training initiatives for those who need further training to be able to embark on a more sustainable working life. More stringent societal sustainability requirements also include supressing unfair competition, and ensuring good order in the labour market and workplaces. The financing of the sustainability transition must also be fair.

Financing climate policy investments

Initiatives to promote Investment and development with demonstration and pilot facilities in such areas as cement, hydrogen and bio-industrial symbiosis networks projects need to continue with public funding. The conditions for this exist. Sweden has long had research and development cooperation where different actors can participate.

Greater use of innovation and environmental technology oriented public procurement highlights the importance of a broader approach to economic benefit. The policy can also impose requirements on other areas to ensure fair conditions and new opportunities to promote the labour market. For example, in the construction agreement area requirements can be made of the contractor to have more apprentice places and labour market programme places than is customary.

New construction and maintenance of infrastructure is costly. On the other hand, this is usually publicly funded since it is a matter of pub-

lic goods that both citizens and businesses need. The development of public transport has also traditionally been mainly a public commitment.

Until a few decades ago, housing construction was a collective political commitment. To resolve the housing crisis, public policy should again take greater responsibility, for example for contracting new construction and for owning rented accommodation in wooden buildings with lower rent. It is hardly likely that on its own the market will build housing for all the young people, students, older people with low pensions and newly arrived immigrants who do not have much purchasing power.

Sweden is facing extensive investment aimed at modernising and extending the transport system so that the Riksdag's objective of a fossil-free vehicle fleet can be realised. To replace the fossil fuels in the transport sector there must be alternatives in the form of both new fuels and new means of transport and transport habits, as well as new infrastructure. It is important that even in the future the public sector will assume the main responsibility for financing infrastructure projects. Transport infrastructure is already a public commitment and should remain so in the future. Energy infrastructure is somewhat more diverse and there are now both public and private owners. Pension funds and the green bond market has shown an increasing interest in various types of energy project. It is possible that these can play a part in the future as regards integration of energy and transport infrastructure.

Sweden needs to invest in housing, develop our infrastructure and our transport system, as well as making our supply of energy and material sustainable. Lack of investment will lead to environmental problems, increased ill health and a worsened climate situation with far higher total economic costs than the investments would amount to.

Framework and need for public support for transition

Changing to reduce emissions of greenhouse gases involves costs. However, these costs are considerably lower than the costs that would arise if we have to deal with the effects of a rising average global temperature and the resulting climate change. Therefore it is not reasonable to see a transition as an expense. It is more reasonable to regard it as an investment to avoid paying for dealing with the deterioration in living conditions resulting from a changed climate. Starting a transition now

is preventive and by limiting the rise in temperature even people in the future will have the chance of living a life with natural conditions similar to those of today.

The UN Intergovernmental Panel on Climate Change estimates that we have a 66 per cent chance of achieving the 1.5 degree target if global emissions start to decline by 2020. There is a short time left but already there are a large number of technical solutions to enable the decrease to start in some sectors. Not all sectors are as far ahead in technological development, but all sectors do not yet need to reduce their emissions as much. Not until the mid-2000s will global emissions be on a level with the amount of greenhouse gases the earth can cope with itself, in other words net zero emissions. On the other hand it is important that all sectors develop a strategy to be climate neutral in the middle of the century. For the sectors that already have technological solutions it is a matter of finding business models and value chains for competitive production. For other sectors it is still a matter of producing effective technological solutions through research and development. If we are to succeed in gradually reducing emissions in accordance with the Paris Agreement this must all take place concurrently.

With the Paris Agreement, the countries of the world have undertaken to limit the global increase in temperature. To succeed, policy instruments must be created that make harmful behaviour more expensive and make beneficial options cheaper and more attractive. Current action is too slow and there is every reason to doubt the ability of the market to deal with this transition within the time required. Much of what is harmful to the climate and the environment is relatively cheap today. So it is reasonable to expect higher taxes and charges as well as prohibition of drivers of climate change. Yet the alternatives will need a helping hand to become large-scale and able to fall in price.

This is a matter of financial subsidies to research and development, investments in a new electricity system and fossil-free infrastructure, as well as increased public sector demand for climate smart materials and goods. These are necessary drivers to enable businesses and private individuals to easily choose and see the advantages of climate-friendly solutions.

Sweden currently has a favourable economic situation. The forecasts for public finances show large surpluses in coming years and in addition

the tax ratio is several percentage points lower than previously. Both national debt as a share of GDP and the interest rate at which the State can borrow are also at historically low levels. "The timing" could hardly be better for making the investments required to reduce emissions and develop alternatives.

The investments proposed by LO enable the State to avoid increased future costs resulting from climate changes. This also makes it possible for Sweden to develop the innovations in the form of goods, services and technical solutions that more and more countries will be demanding. For an export-dependent country like Sweden this is of crucial economic importance. At the same time, Sweden has no fossil resources in the form of coal and oil. By becoming fossil-free and instead using our own resources to meet our energy needs we will also reduce the need to import.

Using an increased share of public resources over a period for a climate-friendly transition should probably ultimately lead to a stronger economy.

Taxing things that have a negative impact on the climate and the environment will also give the State revenues that can be used to stimulate development of alternatives. LO has previously called for a review of taxes aimed at reforming the tax system. Such a review should include the question of how the tax system can stimulate the transition to a climate-friendly economy with stable tax revenues. It is also important that taxes and other economic incentives drive developments at a rate that is in step with the development of necessary technological solutions.

A just transition

We will all benefit from preventing climate change. Therefore, it is reasonable of LO and ITUC to say: share the costs of transition fairly. A fundamental condition for an equal society is high employment with well-paid jobs and good working conditions. This in turn requires businesses with strong competitiveness and high value added. The investments proposed by LO aim to develop the economy so that it meets future needs. By being at the forefront we avoid competing with low wages and poor working conditions. The proposals for further training, skills development and retraining will enable people to contribute to and share in the revenues that a climate-friendly structural transformation

makes possible. The proposals also make it possible to increase economic activity in the parts of the country that are sparsely populated today and thus help to spread economic prosperity to more parts of the country.

5. A more detailed examination of LO's proposed investments

Investments in circular materials supply and green cement

In the short term means initiatives that enable:

– The proposals of the Inquiry on the circular economy to be realised.
– Low and zero emission cement to be developed, including everything from research, via pilot plants to procurement.

In the longer term:

– A societal infrastructure must be in place, along with design directives and a regulatory framework compatible with more circular materials handling.
– All publicly procured cement must be green, which should lead to it becoming the industry standard.

Investments in a renewable smart energy system with solar, wind and hydrogen gas

In the short term means initiatives that enable:

– The electricity generation system to make room for more solar and wind power. This will be possible with a developed electricity grid that is also adapted to both charging and connecting vehicle batteries with the electricity system as a "balancer".
– A pilot hydrogen gas production project to be used to investigate whether and how it could benefit the electricity system, industry and the transport system. The purpose is to utilise cheap renewable energy when there is a surplus, have power balancing capacity when there is a deficit, bring about carbon-free steel production and hydrogen gas powering of transport.

In the longer term:

– It should be ensured that the Swedish Energy Commission's agreement on a fully renewable energy system by 2045 is followed up with necessary investments.
– A hydrogen gas infrastructure should be in place, if it is deemed to be an important component of a sustainable industrial, transport and energy system.

Investments in a fossil-free transport system with more public transport

In the short term means initiatives that enable:

– Public transport at least to be doubled, while urban and community planning enables more cycling and walking.
– Rail capacity to be considerably improved to facilitate both work commuting, long-distance travel and freight services. This requires more maintenance, more tracks for new routes but also for routes that exist but are insufficient. Pricing of different modes of transport also needs to be reviewed, not least as regards the competitiveness of railways and shipping, since they are the most climate smart.
– Vehicle charging with electricity for households and businesses.
– Research and testing of the next generation of powertrains and charge-on-the-go of electric vehicles, which will then give a boost to heavy vehicles. This may be a matter of both hydrogen gas and fuel cells, various electricity charging alternatives and how, where necessary, they can be combined with biofuel powering. Initiatives for sustainable shipping and if possible sustainable aviation can also be included.
– Good order in the transport industry to safeguard the working environment, road safety, decreasing environmental, climate and health impact. Neutrality of competition must also be ensured so that those who actually follow the rules are not disadvantaged. In this context, transponders can also be used to design a charge that will stimulate the use of climate-neutral fuel.

In the longer term:

– Public transport and rail capacity need to be extended. There must be electric vehicle charging stations along the national roads and perhaps built into the E-roads through Sweden.
– A prohibition against driving fossil-powered vehicles in some regions needs to be introduced.

Investments in bio-based industrial symbiosis and better conditions for the green industries to benefit the climate

In the short term means initiatives that enable:

– Bio-based products to be more in demand through various policy instruments that give incentives for a transition.
– Pilot plants to be in place to scale up promising research results.
– Methods for replacing carbon sequestration and other eco-system services to be tested. This is to benefit sustainable cultivation and reduce the green industries' own net and gross greenhouse gas emissions. With carbon sequestration some parts of agriculture may possibly then have negative emissions.

In the longer term:

– There are fully functioning bio-based industrial symbiosis networks that can supply the economy with much of what used to require fossil raw materials.
– There is climate smart food supply with greater eco-system service production.

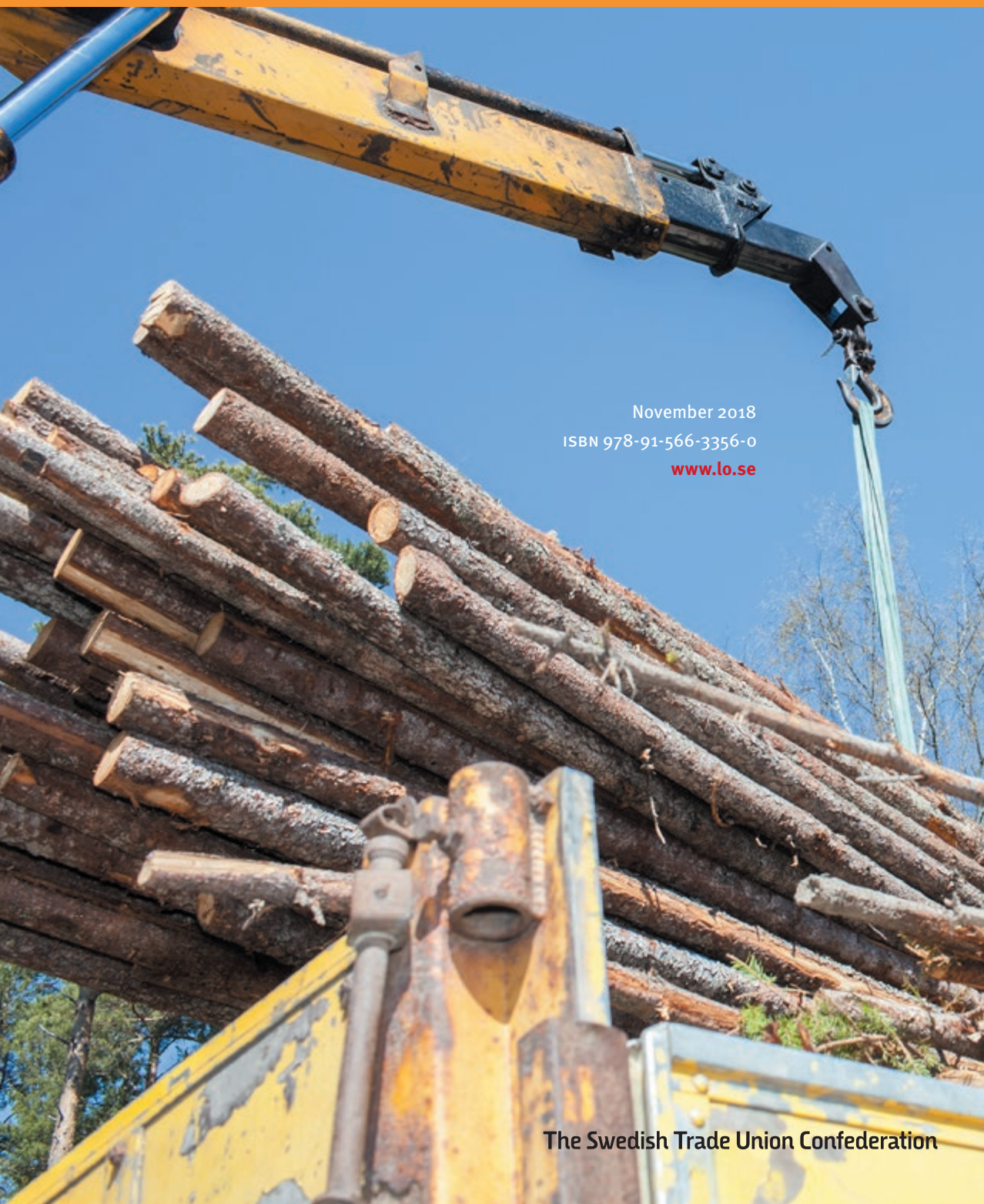
Investments in increased wood construction to create jobs throughout the country while reducing climate emissions and the housing shortage

In the short term means initiatives that enable:

– Increased wood building construction market share while maintaining the high pace of construction required for solving the housing shortage. Targeted training initiatives for all parts of the wood construction supply chain – from forestry, via the wood-based industries, to industrial and site construction – are needed right now in order to succeed.
– Climate requirements to be imposed on construction, which forces construction projects and construction material suppliers to review their choices of material and its climate performance in all construction.
– Industrial construction of wooden buildings to be developed with the help of both training initiatives and publicly financed orders.
– Municipalities and other public sector actors to increase their commitment to housing supply and the State to use regional policy to support sustainability creating development throughout the country. This can also usefully be linked to the bio-industrial symbiosis network projects.
– Procurement agreements that secure good order in the construction industry. At the same time they can include requirements for apprenticeship places and social sustainability clauses.

In the longer term:

– Climate impact needs to be an integrated part of new construction and renovation projects and via tax and subsidy systems internalised into construction and housing cost estimates.
– The lifecycle of buildings needs to have increased considerably through better maintenance and design. To facilitate both maintenance and rearrangement of existing premises when needs shift over time, extend carbon sinks for long-lived wood-based construction materials.
– New construction needs to take place partially by re-using previously used construction material. This extends the carbon sink effect further for the re-used parts made of wood.



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