East Lothian Council

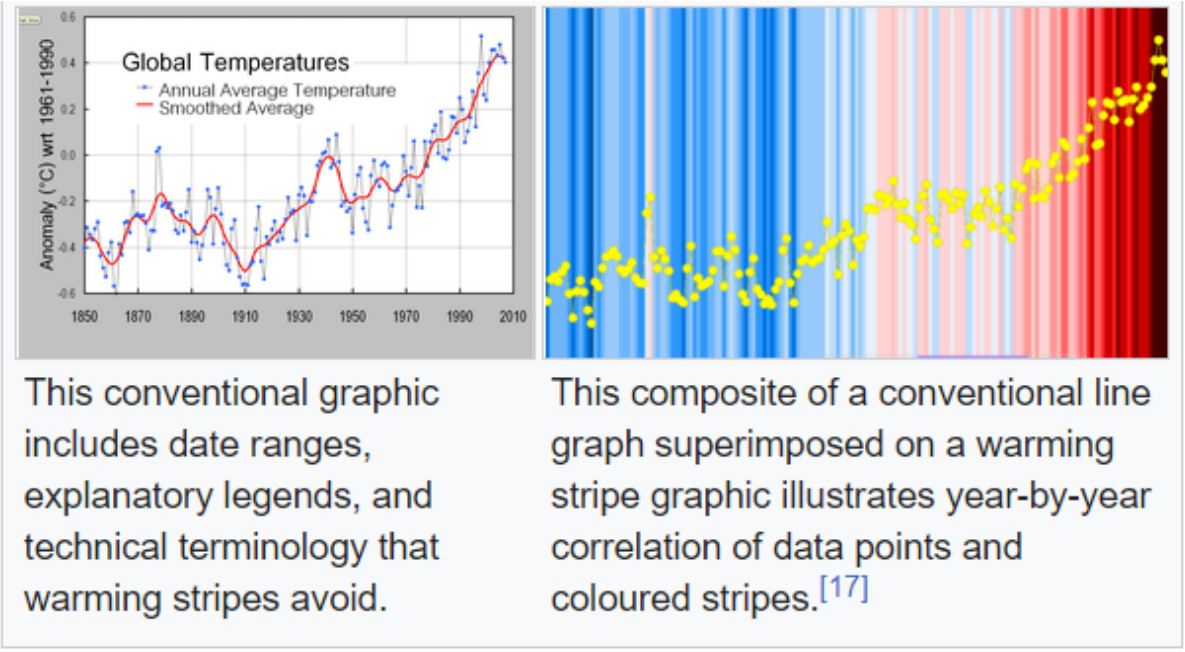
LOCAL DEVELOPMENT PLAN 2

Climate Change, Energy Generation and Efficiency

What is the issue?

Scientists agree that the world is warming. The Intergovernmental Panel on Climate Change (IPCC) say

"It is unequivocal that human influence has warmed the atmosphere, ocean and land"[i].



This conventional graphic includes date ranges, explanatory legends, and technical terminology that warming stripes avoid.

This composite of a conventional line graph superimposed on a warming stripe graphic illustrates year-by-year correlation of data points and coloured stripes.[17]

IPCC: *"Global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in CO2 and other greenhouse gas emissions occur in the coming decades."*

As greenhouse gas emissions are building up extreme weather events may occur more often. These weather events can become more impactful to our local and global economies, our society and the natural environment.

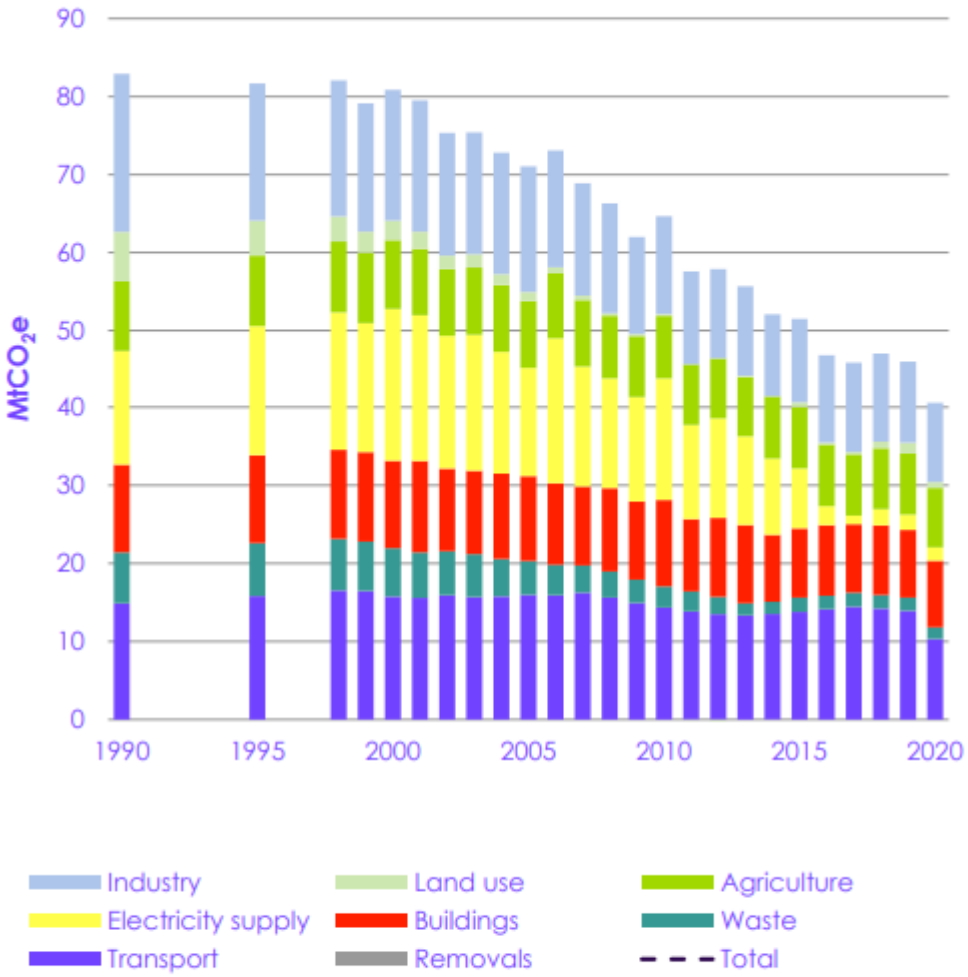
Risks for food and water security, health, ecosystems and economic development increase as global temperatures rise.

What is causing climate change?
Some gases trap the heat from the sun in the atmosphere, instead of reflecting it back out to space. The main ones are;

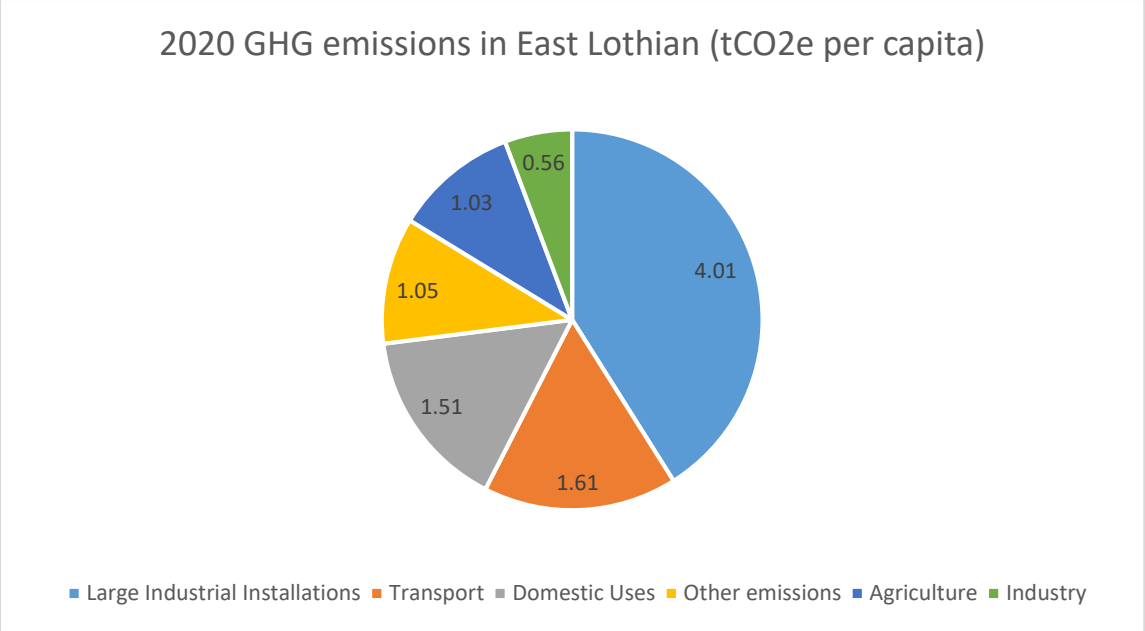
- carbon dioxide (CO2) which comes from burning fossil fuels like oil, coal or natural gas, mostly for electricity, heat and transport, and cement manufacture
- methane, which comes from oil and gas production, landfill sites and cows digestion systems
- nitrous oxide, emitted agriculture, fossil fuel use, biomass burning
- fluorinated gases from refrigeration, air conditioning, and some foams and aerosols

The UK and Scottish Governments have taken action to reduce emissions, including through planning policy. Emissions have reduced a lot, mainly due to a change in how we make electricity, moving from coal, gas and oil to renewables and nuclear. In 2020, East Lothian's largest emissions source were large industrial emissions followed by transport and domestic uses.

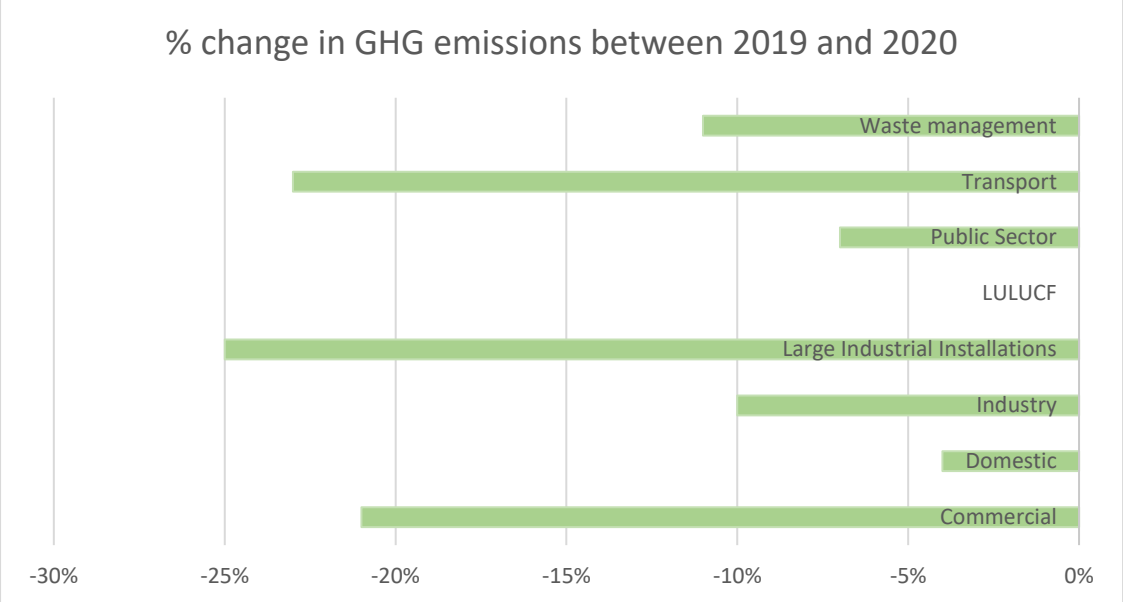
Figure 5 Scotland's historical emissions (1990-2020) and the Scottish Government's pathway (2020-2032) by sector



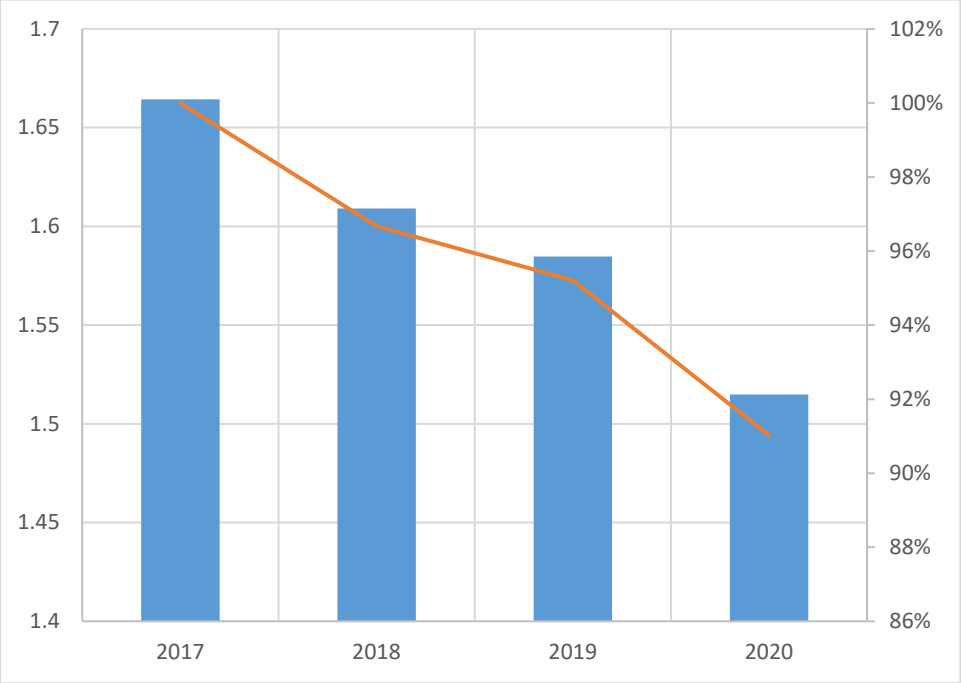
GHG emissions 2020 – all sectors (other includes Waste Management, Public Sector, LULUCF).



Greenhouse gas emissions have fallen in East Lothian since 2000.



% change in GHG emissions from residential buildings between 2017 and 2020



Action to reduce climate forcing emissions must increase. In recognition of this, in 2019 the Scottish Government and East Lothian Council and others declared a Climate Emergency.

What can planning do?

There are lots of ways planning can help reduce emissions. For example we can:

- reduce the need to travel by locating work, education, retail and leisure destinations close to each other, and to where people live
- make travel by foot or cycle or public transport easier
- support renewable energy production
- encourage energy efficiency in our homes and other buildings
- Protect woodland and peatland from development

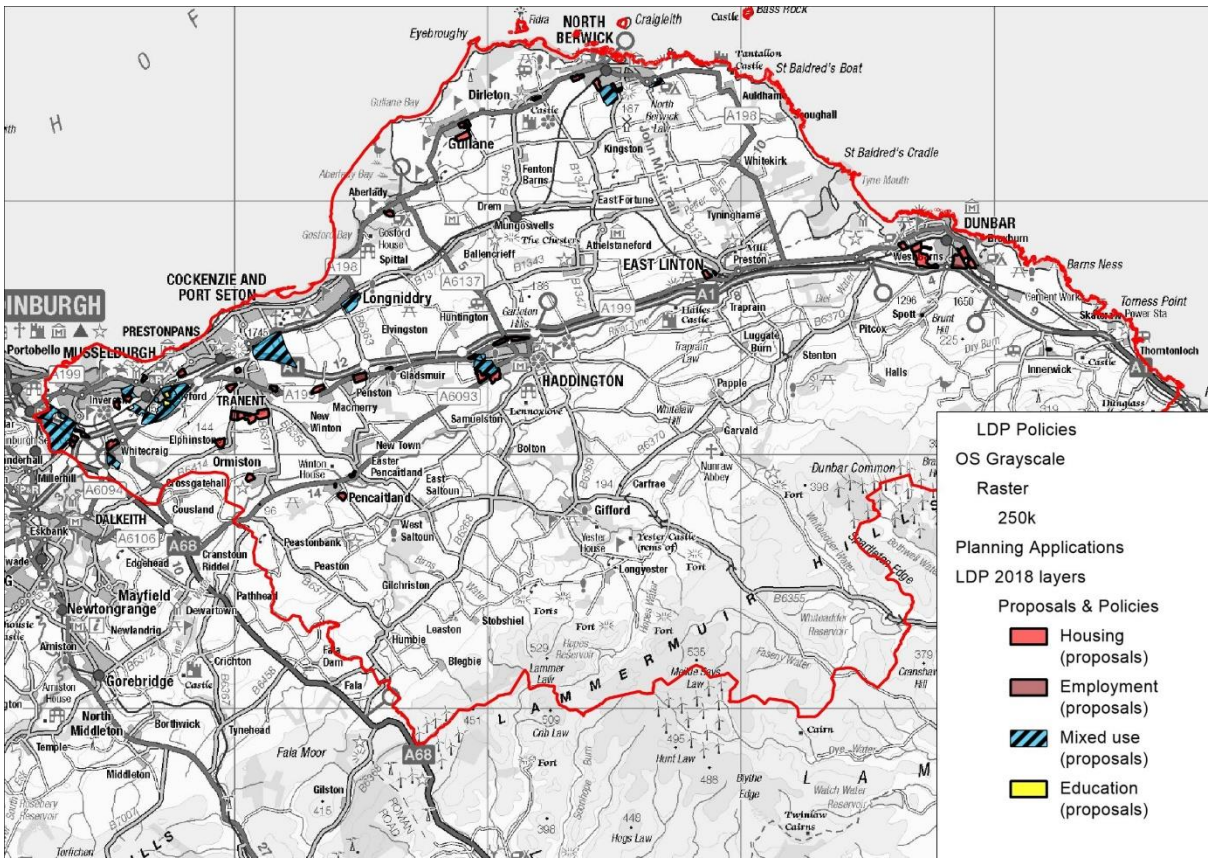
We can also help adapt our places to climate changes that cannot now be avoided.

Action relating to Climate Change

Reducing the need to travel

The LDP planned for new housing and employment to be focussed on the west of the county, where travel time to Edinburgh is less, and in towns where there is good public transport to Edinburgh and daily shopping needs could be met. Availability of primary and secondary education was also a major consideration. Sites were therefore chosen firstly around Musselburgh and Wallyford. An allocation was made in Haddington, which had good availability of jobs, as well as a fast bus service to Edinburgh, primary and secondary school and a good retail offer. Further housing sites were chosen at Dunbar, Longniddry and North Berwick, which have train services to Edinburgh as well as having a range of shops and high quality open spaces.

This strategy has been successful in that the chosen sites were capable of development and marketable. Most now have planning permission and many are now under construction.



This new LDP will have to consider whether there is a need to allocate more housing sites. Employment sites will still be needed. For whatever level of allocations is decided the plan will have to look at reducing the need to travel on a more local level. This will include planning to meet needs locally, in 20 minute neighbourhoods.

Encouraging active travel

The LDP already contains policy (T1) requiring development to be accessible by foot, cycle and public transport as well as by car. It also requires that (T2) development does not affect how easy, safe or pleasant it is to walk or cycle in the area. The plan included proposals to support active travel including a new active travel corridor from Dunbar through to Edinburgh, and platform improvements at rail stations. Developer contributions were required for these. Transport improvements to support buses and improve air quality were promoted in Musselburgh and Tranent High Streets. Design Briefs were drawn up for the larger housing sites which included pedestrian links.

There remains a high use of the private car for many trips and future LDPs will need to out further emphasis on the sustainable accessibility of new development and the levels of parking provided. Meeting Scotland's climate change targets will need a 20% reduction in car trips by 2030. This is a challenging target and people's current travel patterns will need to change to achieve this. We need to plan for places that make it as easy as possible for people to choose to travel by active means.

Supporting renewable and low carbon energy

East Lothian currently hosts a considerable portion of Scotland's low and zero carbon generating capacity.

				
Torness Nuclear power station 1290MW	Crystal Rig 200.5 MW	Aikengall/Wester Dod 180Mw	Dunbar Energy from Waste plant 30MW	Viridor landfill gas

Torness Nuclear Power station was consented in 1978 and began producing power in 1988. Decommissioning could start in 2028. Crystal Rig and Aikengall/Wester Dod windfarms both, straddle the boundary with Scottish Borders. Crystal Rig, with a nameplate capacity of 200.5 MW, was in 2022 was the second highest capacity of all windfarms in the UK, with Aikengall at 180MW not far behind. Other renewable generators are the Energy from Waste Plant at Dunbar, several anaerobic digesters, a landfill generator, smaller wind turbines and small solar arrays. In addition some houses and buildings have installed solar panels, heat pumps and even small hydro schemes.

Connections to significant offshore windfarms at Neart na Gaoithe and Inch Cape also come ashore in East Lothian, with further connection to Berwick Bank Offshore windfarm in planning.

Decarbonising the grid is important to help Scotland and the UK meet climate targets. Policy 11 of NPF4 supports renewable energy, though proposals must show how landscape and other impacts are mitigated. NPF4 also contains policy protecting landscape areas as well as other natural and cultural heritage assets. The current LDP steers large scale wind development to the Lammermuirs, where it seeks a 'cluster and space' pattern of development, with some areas largely free of wind development. The plan also sought to restrict the height (and therefore generating capacity) of wind turbines in the lowland areas, largely to protect landscape and cultural heritage interests.

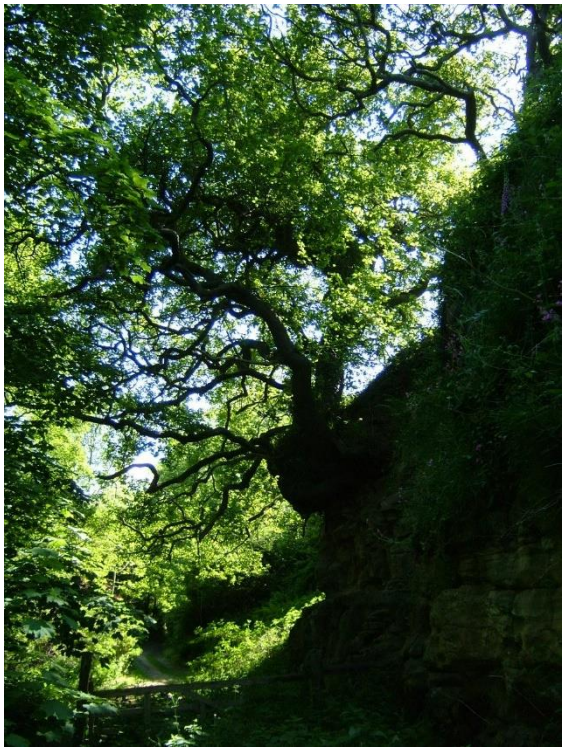
A significant increase in the use of renewable heat is important if Scotland is to meet its climate targets. There are challenges in matching producers and users of heat, as well as retrofitting heat networks and issues around financing and deregulation of energy supply. East Lothian currently has very low usage of its potential heat resource. The energy from Waste Plant produces a significant amount of heat which is challenging to use as it is located too far from most potential users.

Encouraging energy efficient buildings and layouts

Building Standards govern the energy efficiency requirements of home construction, and are increasing. Planning can plan housing layouts which shelter or shade buildings so they use less energy, or can gain heat from the sun. Although our design policies include encouragement for energy efficient design, this is only one consideration among many. Planning policy could seek a greater emphasis on producing an energy efficient design. This would allow for more of the renewable energy produced on housing sites to be used for appliances within homes rather than heating, so reducing electricity demand overall.

Protection of trees, woodland and peatland

Trees and woodland store carbon, as does peatland, saltmarsh and some grasslands. Scotland has targets for both woodland creation and peatland restoration, but is behind on both. It will be hard for Scotland to meet overall carbon targets without improvement. Peatland in particular is a concern as where it is eroding or drying out it actually causes emissions.



The Scottish Governments Control of Woodland Removal Policy restricting the circumstances and type of woodland that can be felled, and generally new replacement planting is required. It takes time however for new trees to replace the carbon value of mature ones.

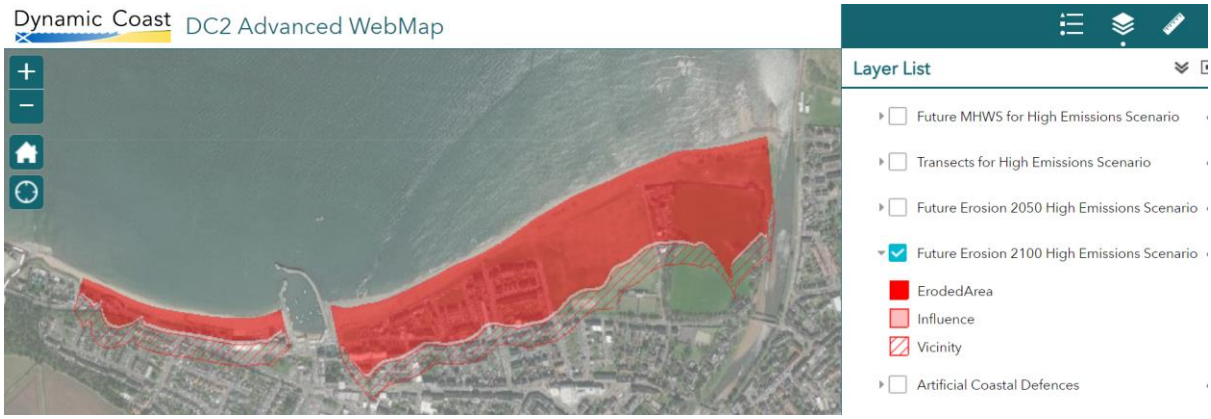
Planning can help protect trees, woodland and peatland, and require and encourage new planting when development is proposed.

Adaptation

We will have to adapt to coming climate change and potential sea level rise. In East Lothian we can expect warmer, wetter winters, more intense rainfall, drier and warmer summers, and more chance of extreme weather.

We also need to think about how to adapt our outdoors so we can enjoy being outside in heat as well as cooler weather. We may also have to adapt pressures on our land that come from changes elsewhere, for example less land for growing crops globally could mean we need to be more careful with loss of our agricultural land, especially prime land.

We will also have to plan for coastal erosion. Some communities may require sea defences and/or coastal realignment. NatureScot have produced maps showing the potential future coastline, extract shown below.



[i] IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 3−32, doi:10.1017/9781009157896.001.