

## Emergency Energy Reduction for the UK Motion Briefing Paper

### Summary

The need to greatly reduce the use of fossil fuels is very widely accepted. It is Green Party policy to end their use and to reduce net emissions to zero by 2030 if possible. The wisdom of this approach has been reinforced by the spike in the gas price and consequent cost of living crisis.

Russia's invasion of Ukraine has left European countries, including the UK, funding Russian aggression and vulnerable to blackmail. The need to reduce fossil fuel imports has gone, almost overnight, from important to important and very urgent.

The Energy Policy Working Group was asked to devise policies that would eliminate the UK's need to import Russian fossil fuels<sup>1</sup> fast enough to affect the war and support the international sanctions regime. To avoid simply switching procurement to other objectionable regimes so that other countries would be funding the war we looked for ways to reduce our use of fossil fuel energy within 12 months.

We found four groups of possible actions:

		Affecting	Energy savings per year (TeraWatt hours)	Fuel reduced	Public investment (£billion)
A	Buildings retrofit	3-4 million homes	17	Gas	5.3
B	Renewables	750 thousand homes and 10 GigaWatt wind	35	Gas	6
C	Lower speed limits	At least half of us	45	Oil	0
D	Fly and drive less	At least half of us	75	Oil	0
E	Less home heating and hot water	Most people	65	Gas	0
	TOTAL	Most people	237		

In total these actions would reduce the UK's need for Russian fuels by markedly more than the amounts we import from Russia – meeting our objectives.

Which is not to say it would be easy:

- To meet our targets for A and B would require some regulatory changes, new training courses and a centrally-directed switch in resources from other sectors.
- To meet our targets for C would require more enforcement.
- To meet our targets for D and E would require a new national commitment to making sacrifices for a noble cause. It is hard to see that the current government could or would want to do such a thing.

Nevertheless, that is what needs to be done.

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<sup>1</sup> Before the war the UK imported 8% (65 TWh) of its oil and 5% (40 TWh) of its gas from Russia; both less than the EU average.

## **Background**

The Green Party has a policy set in its Policies for a Sustainable Society that are very strong on energy efficiency and reducing the use of fossil fuels. These strong policies are in the context of the policy to achieve net zero emissions by 2030 (CC015) [5].

These policies are made more specific in the Green Party's 2019 General Election manifesto, [6], that describes a Green New Deal for the decade of the 2020s. This makes the amount of energy efficiency and reduction more specific but is, like policy CC015, describing a decade of action, rather than focussing the mind on what can be achieved in the next year.

Late in 2020 wholesale prices for oil and gas started to climb, leading to sharp climbs in domestic energy bills leading to the cost of living crisis. This was then exacerbated by the start of the Russia Ukraine war and as of July 2022, gas prices are as high as ever ([19]).

The Green Party responded to the war in the Ukraine by passing an emergency motion at its Spring 2022 conference to have a "comprehensive export and import ban [with Russia], including oil and gas" [7]. The Green Party have also passed, by the interim policy approval process, motions that supports a windfall / dirty profits tax on North Sea oil and gas producers and a package of support to those on Universal Credit and other benefits to protect those least able to cope with the rapidly rising energy bills [8].

This motion supplements the energy policies in the PSS and manifesto but focusses on what can be achieved in the next year in the context of the need for immediate action to address both the war and the cost of living crisis. This motion also aims to supplement the recent emergency motion and interim policy statements, but to focus on the energy efficiency and usage to complement them in terms of immediate action.

## **Policy Motion**

The policy motion is available at [1]. This section gives some further detail background and commentary to topics covered in the motion

UK reliance on Russian oil and gas. Before the Ukraine war imports of oil from Russia accounted for ~8% of total UK oil demand and ~5% of gas demand [4]. This is a fairly low level of reliance compared with EU reliance. Rather than importing more from elsewhere or increasing domestic supply from the North Sea it is by far the greenest option to reduce demand for oil and gas. Options are explored in more detail in [4] under policy levers. Potential additional use of oil and gas from the UK continental shelf (North Sea) is covered in another energy note "Keep Fossil Fuels in the ground" [9]. Examples of potential reductions in fossil fuel use are shown in the table of reduction measures below. These are also summarized in the Energy Policy Model (EPM) [10] "One Year Plan" sheet. This shows a ~13% reduction in both UK oil and gas from such measures in a year time frame.

Investment package. Given that in the context of this motion, we are looking at things which can be done in a year, the package is going to include things which are already in the pipeline with existing private or public funding. But there will also be scope for new government lead initiatives that can be started and delivered within the year. In the table below there are opportunities where increased government investment of ~£10 billion (bn) could significantly increase ambition for reducing oil and gas use. Sometimes this is direct funding of projects and sometimes in the form of loans and grants to individuals and organizations to encourage oil and gas reduction measures.

Note that this £10 bn is quite small compared to the Green New Deal (GND) proposals in the manifesto [6]. [6] is proposing an average £100 bn / year public investment with a further £50 bn / year private investment. There are two main reasons for the large difference, and this proposal is in no way meant to contradict the manifesto investment commitments. The first reason is that the scope of this motion is just for part of what was included in the scope of the Green New Deal in [6]. The second reason is that the GND measures proposed in [6]

require a slow ramp up towards spending more than £100 bn / year in year 10. This motion does not mention investment in electricity grid and storage. These are highlighted for large public investment in [6] but are not covered in this motion as this is focussing on what are the best things to do to reduce energy use in the next year. Increased investment in these must be started in the next year.

So this proposal for investment is not considered to be a change of investment from the 2019 GND proposals and thus does not require any raises in taxes. The GND proposals were from borrowing. As it is for investment, this spend is not expected to be inflationary.

Note that the £billion numbers in the motion do not exactly match the public investment numbers in the table below. The motion does not want to give the impression of exactly worked out investment costs (so no decimal points). It is quite possible that when detailed plans are made, some investment packages would be higher and some lower. The £billions in the motion are to give the order of magnitude of the investment being proposed.

This motion goes further than just reducing oil and gas imports from Russia to lower than pre-war levels, but also goes some way to assisting Europe also reduce its imports from Russia. In total the package of measures are calculated to reduce oil and gas imports by ~£14 bn / year once completed - ~£8bn/year for oil and ~£6bn/year for gas – at June 2022 prices. This saving needs to be taken into account when assessing the investment proposed.

Another financial aspect of this motion is the fossil fuel supply demand mismatch. This can either be resolved by increasing supply (more drilling) – but the Green Party, rightly, is very much against this. It can be resolved by energy reduction, as per this motion. Or it can be resolved by high prices, pricing out less wealthy countries (eg Sri Lanka) and continuing to provide Russia with very high prices for oil and gas that they still sell – obviously not a good idea – but is a part of the global current approach.

**Buildings.** In the long term building retrofit is going to be a key part of the Green New Deal and the route towards reducing gas usage. The unfortunate thing is that the current level of activity, regulation and training in this sector is very low. Starting too fast and doing it wrong can be counter-productive (eg the cladding crisis). Although the amount of building retrofit measures in the table below is very ambitious compared to what has been achieved in recent years, the results in gas savings in the next year is unfortunately quite low compared to behavioural change measures. But this still must be part of the mix of measures proposed for the next year. Note that only ~30,000 loft insulations were done in 2021, ~50,000 cavity walls and ~15,000 solid walls ([17] Fig 4.6).

There are ~200,000 new homes being built per year. Every encouragement / change of regulations should be made to ensure none are fitted with gas boilers. In most cases this will be heat pumps. There is also a replacement of ~2 million gas boilers per year. Many of these are in well enough insulated buildings to have heat pumps. For these, we should incentivize the replacement of gas boilers with heat pumps, especially where other insulation work is being done (eg cavity walls insulation). Note that only ~50,000 heat pumps were installed in 2021 ([17] Fig 4.10).

As per the General Election manifesto, [6], there is a need for considerable investment in the electricity transmission system. This certainly needs to be started in the next year. Some potential sites for heat pumps will not be possible without this, but this has not been the focus of this motion but is covered in [6].

In addition to investment there also needs to be independent advice to homeowners and training for installers, with a view to this being just the start of a long term programme.

The motion includes an indicative 20% for the nature of reduction of personal energy use. As per the table below, a 65 TWh reduction is suggested as being possible for heating and hot

water in domestic settings. This is ~18% reduction in use of domestic heating and hot water comparing consumption in 2021 of 355 TWh (see BEIS statistics [16]).

Renewable Energy. Specific renewable energy measures are suggested in the table below. It majors on solar PV, as these projects can be delivered from idea to generating electricity within one year. However currently there are significant supply chain constraints, particularly for inverters, that are essential for their deployment. So it could be argued that the numbers are over optimistic.

Generally speaking wind projects take much longer, with 6 to 7 years from idea to generation being typical. There are various estimates of projects in the pipeline including this Guardian article, [11]. The Guardian states that there are “17.4 GW of projects have cleared planning permissions and are “shovel ready””. If the Guardian’s optimism is correct, that it is just government intervention making these projects “likely not to be built this year”, then the estimate in the table below for Wind onshore and offshore is a major under-estimate. But given recent experience I think the Guardian estimate is too high.

Another view on the pipeline is from the CCC 2022 report to parliament which has very low pipelines for Solar PV and onshore wind for the next year (see [17] Figure 6.7). But this does have a relatively high value of the offshore wind pipeline (5 GW to be deployed in 2022 and 2023) and so there may be potential for pressing for these to deliver as soon as possible.

There is also the recently announced Contracts for Difference Allocation round 4 results, [18], that expands the pipeline, but the first delivery year for any of these projects is 2024/25 (even for Solar PV) and so it is not clear that these projects can be accelerated.

The estimates in the table below for Solar PV may be too high and the wind estimate may be too low, but collectively government intervention with support in many ways including money, could rapidly increase renewables generation. This generation will allow less electricity generation using Closed Cycle Gas Turbines (CCGT) and thus reduce the UK requirements for gas.

Transport use. As can be seen in the table below the main measures for reduction in oil is doing less domestic travel. That is because such a large amount of oil use in the UK is used for domestic travel. So to achieve a large overall reduction in oil in the short term, then this must be addressed. A large increase in the use of EVs in the next year as a modal shift from internal combustion engine cars will not achieve this – and even if it could, this would not fit well with Green Party policies. A mode shift to public transport could possibly reduce oil use, but to actually reduce oil use a lot, it requires less travel, not just mode shifting from one fossil fuel vehicle to another.

The motion includes an indicative 20% for the reduction of personal driving and flying less. As per the table below the aviation reduction was calculated on the basis of a 20% reduction. In 2021, UK aviation was more than 50% down on 2019 [17]. So this allows for some rebound in 2022 but not back to 2019 levels. The aviation industry is struggling to get back to 2019 levels, in any case, for other reasons. In terms of reducing energy use, this is a good thing. In the table below the reduction for car use is 15%. Car use was down 15% from 2019 levels as recently as December 2021 during the Covid pandemic [17]. But when including lower speed limits it is over 20% energy reduction. So for the simplicity of the wording in the motion, and keeping to one high level 20% for simplicity, there are complementary narratives that do support the high level reduction target.

As with the discussion on investments above, the motion should be seen as a high level starting point for ambition. Individual packages and outcomes may be different (eg more reduction in flying and less in driving) but are aimed to be in this ball park. This briefing paper shows that this level of ambition is credible as a starting point.

Due to the cost of living crisis, there is already some anecdotal evidence of people cutting back on car and air travel for economic reasons. It is proposed to not only have this effect,

but to promote less travel as a merit in its own right – and especially for local travel to promote the health benefits of cycling and walking short distances – and to continue some practices adopted during the Covid pandemic with less commuting. Note that not many car miles are actually done on short distances, so some longer journeys also need to be avoided by promoting the benefits of getting involved in local communities.

As noted previously, this motion is in the context of the overall comprehensive proposals for investment in transport laid out in the General Election manifesto [6]. This includes large investments in public transport and reduction in fares. But this motion is about using less energy in order to address a major world imbalance in energy supply and demand. For that the most important thing is to do less high energy consuming travel such as cars and aviation.

The recent IPCC (Inter-Governmental Panel on Climate Change) Assessment Review 6 Working Group 3 [13] report has more of a focus on the part that behavioural change can take in reducing emissions including reducing emissions by 40-70% by 2050 (clause C.10). The proposals for the next year, in this motion, are the start of this.

Speed limits. As per the motion text, reducing speed limits on UK roads has been done before during previous energy crises. This is already Green Party policy TR113 to TR115 (20, 40 and 55 miles per hour). This is generally agreed to result in significantly lower energy use. Many motorways already have the infrastructure to reduce speed limits so some reductions can be implemented very rapidly.

Reduction in personal energy use. A large amount of gas is used in the home, and so to get large overall reduction in gas use, this has to be examined. As mentioned above, retrofitting homes is a good thing to do, but is not going to deliver the sort of large gas reduction required in a one year time frame.

While some households are in fuel poverty or have special needs for heat, and are already being as frugal with gas use as possible, there are many homes in the UK where gas use can be significantly reduced, and decreasing bills, by changing behaviour. And as with travel, anecdotally, there are many cases where people have discovered how to considerably reduce gas use by wearing an extra layer of clothing and thus reducing the thermostat, or choosing only to heat the room people are in, or by switching off heating when not in the home or at night.

This sort of behaviour should be promoted with good advice given on what are reasonable measures and what are not. As can be seen in the table of measures below, this is being promoted by the IEA for the EU.

This category also includes ensuring that existing boilers are running most economically, and ensuring that old boilers are replaced by the most efficient gas boilers – where it is not practical to replace the gas boiler with a heat pump.

## **Other Considerations**

### Industry

A number of ideas were examined to move the focus from actions only by government and individuals (as per the motion) and include more focus on what Industry could achieve to complement these.

Some of the ideas suggested include:

- Restricting cargo only flights
- Reducing plastic demand
- Reduce unnecessary trade to save oil (eg from waste, scrap & meat/fish/dairy by air)
- Reducing construction & HGV miles (these are linked as a significant amount of HGV miles is heavy aggregates for construction)

These have not been given prominence in the motion partly due to disagreement about the amount of reduction in oil and gas use possible in the one year time frame. Secondly there was a lack of understanding of the implications of taking up some of these suggestions. For example reducing construction may result in current construction projects being slowed down or abandoned. Construction projects are generally on multi-year time scales so it is possible to reduce this, but it is less clear what can be achieved in a year.

Thirdly there has been a lack of time and bandwidth to pursue these ideas further as part of this motion. So the approaches to reductions in emissions and energy use in Industry remain those that are highlighted in the 2019 manifesto [6].

### Measurement

As mentioned above there is already some anecdotal evidence about individual domestic cut backs in energy use. The effect of all these measures will need to be monitored. As yet evidence of reductions in oil and gas demand is not clear.

### Conservative and Labour Party Positions

According to the Times, the government is “hatching a plan” to insulate homes with an investment of £1 bn. (see [14]). It is not clear over what time period this is over, but this is less than proposed in this motion which is £3bn in the first year.

The Climate Change Committee report just released [17], shows the lack of ambition across most sectors, including home insulation, and how the credible plans fall well short of what is required to meet the government’s targets. There is a serious risk that focussing on targets for 2030 and 2035, the government is putting off serious immediate action.

Labour plans to insulate 2 million homes within a year, as part of a decade long £60 bn scheme. (see [15]). This motion proposes, by contrast, to insulate 4.6 million homes within a year. This is in the context of the GE manifesto [6] decade long scheme of £250 bn.

### Specific Oil and Gas Reduction Measures

In the light of the energy crisis, this is an examination of energy saving measures that could be implemented within one year. It is not an exact list of the measures that are proposed, but gives an indication of the amount of difference each measure would make and how much public investment it could take.

Measure	How much	Energy impact	Public investment	Comment
Heat pumps	0.5 million homes	7 TWh (Terawatt hour) fewer gas and 3 more electricity	£2.5 bn	IEA point 7
Cavity walls	1.5 million homes	7 TWh fewer gas	£0.7 bn	IEA point 8
Loft insulation	3 million homes	2 TWh fewer gas	£0.6 bn	IEA point 8
Deep retrofit	0.1 million homes	1 TWh fewer gas	£1.5 bn	IEA point 8

Measure	How much	Energy impact	Public investment	Comment
Lower home temperature	1 Centigrade	45 TWh fewer gas		Saving on fuel bills. IEA point 9
Less home hot water	25%	20 TWh fewer gas		Saving on fuel bills
Solar PV domestic	0.75 million homes - 3 GW (GigaWatt) total	5 TWh fewer gas	£2 bn	Solar PV electricity displaces gas powered electricity. IEA point 4
Solar PV Industry	8 GW total	15 TWh fewer gas	£4 bn	Solar PV electricity displaces gas powered electricity. IEA point 4
Wind onshore and offshore	2 GW	15 TWh fewer gas		Accelerating already existing developments. IEA point 4
Aviation	20% fewer flights	30 TWh fewer oil		This is avoiding the increase back to 2019 levels
Cars	15% fewer miles	45 TWh fewer oil		Some displaced by walking and cycling
Reduce speed limits	40 mph and 55 mph limits (from 60 mph and 70 mph)	25 TWh fewer oil		

For each of these measures, the EPM [10], “One Year Plan” sheet elaborates on how the energy savings and investments are calculated.

In the comments the IEA points relate to IEA ten point plan [3], so as to compare this approach with that being proposed by the IEA for the EU.

This collection of measures listed, if all applied, reduces gas use by ~100 TWh (or ~10 billion cubic metres (bcm)). This is ~13% of UK gas use. This is in the context of the EU target of reducing gas dependency on Russia by 100 bcm by the end of the year. So the UK could assist with 10% of the EU target. It reduces UK gas use more than current UK gas imports from Russia. This allows Norwegian gas to be diverted to the EU rather than being exported to the UK. This may happen next winter whether we like it or not.

This collections of measures, if all applied, reduces UK oil use by ~100 TWh. This is ~13% of UK oil use. This is a bit more than pre-war UK reliance (~8%) on Russian oil. The EU is also heavily reliant on Russian oil (~20%) and is aiming to ban all Russian oil as well [12]. It is easier to reduce use of oil and divert oil to the EU due to the use of oil tankers that are readily diverted.

Targeting a 20% reduction in both UK oil and gas use would be a justifiable policy target in the light of international energy crisis / Ukraine but the package of policy measures does not achieve this.

To incentivize some of the measures to take place at this scale in a year would require generous public investment. This is at the scale and proportion as envisaged in the GE 2019 manifesto. This public investment for all measures would be ~£10 bn in the next year.

Independently of whether this 1 year plan is explicitly adopted and promoted by the Green Party, many of these measures are required at this sort of scale in any case to get anywhere close to net zero emissions in 2030 and the manifesto GND proposal. Many of these one year measures could be applied pro-rata as local targets for councils or regional governments.

Some of the context for this is covered in previous energy notes on the Energy Crisis and Russian fossil fuels published in Green Spaces [4].

## **Process**

Standing Orders for the Conduct of Conference (see [16]) (SOCC E1.3) states “Policy motions should be succinct and not contain excessive background commentary”. To this end the RoPS proposed is short.

SOCC [16] E1.3 goes on to say “A separate briefing paper should be submitted which should contain relevant background material, costings, research, consideration of counter arguments, relevance to campaigns etc. (an optional template will be provided by PDC). This paper will be made available on the members' website and at conference.”

This document is the separate briefing paper for this motion and is available at [2] with the motion. This will also be posted on the conference agenda forum when available.

## **References**

[1] Policy motion – <https://spaces.greenparty.org.uk/s/autumn-conference-2022-agenda-forum/?contentId=97875>

[2] Briefing Paper – posted in thread at <https://spaces.greenparty.org.uk/s/autumn-conference-2022-agenda-forum/?contentId=97875>

[3] IEA A 10-Point Plan to reduce the EU’s Reliance on Russian Natural Gas  
<https://www.iea.org/reports/a-10-point-plan-to-reduce-the-european-unions-reliance-on-russian-natural-gas>

[4] Russia Oil Gas Import <https://spaces.greenparty.org.uk/s/energy-policy-working-group/cfiles/browse/index?fid=37>

[5] Policies for a Sustainable Society <https://policy.greenparty.org.uk/>

[6] Green Party 2019 General Election Manifesto  
<https://campaigns.greenparty.org.uk/manifesto/> and as amended at  
<https://spaces.greenparty.org.uk/s/climate-change-policy/cfiles/browse/index?fid=600>

[7] Russia’s illegal war in Ukraine <https://spaces.greenparty.org.uk/s/spring-2022-emergency-motion-forum/?contentId=89983>

[8] IPP001 Dirty profits tax  
<https://spaces.greenparty.org.uk/file/file/download?guid=d7748074-ba70-48c5-be29-c4e9bd61e646&download=1> and <https://spaces.greenparty.org.uk/s/energy-policy-working-group/cfiles/browse/index?fid=1168>

[9] Keep Fossil Fuels in the Ground <https://spaces.greenparty.org.uk/s/energy-policy-working-group/cfiles/browse/index?fid=1140>



- [10] Energy Policy Model <https://spaces.greenparty.org.uk/s/energy-policy-working-group/cfiles/browse/index?fid=1140> (draft for Autumn 2022 conference compatible with this note available on request)
- [11] Limits on renewables <https://www.theguardian.com/environment/2022/may/24/limits-on-renewables-will-keep-uk-energy-bills-higher-this-winter>
- [12] EU Russian Oil Ban <https://www.bbc.co.uk/news/world-europe-61591614>
- [13] IPCC Working Group 3 6<sup>th</sup> Assessment Report Summary for Policy Makers [https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC\\_AR6\\_WGIII\\_SPM.pdf](https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_SPM.pdf)
- [14] Plan to insulate Britons against winter bills <https://www.thetimes.co.uk/article/boris-johnson-hatches-plan-to-insulate-britons-against-winter-bills-vq7xdjq3h?shareToken=d684bd1659b37d5550960b263db0f81e>
- [15] Labour says it will insulate 2m houses in first year <https://www.theguardian.com/business/2022/apr/19/labour-says-it-will-insulate-2m-houses-in-first-year-to-cut-bills>
- [16] Energy Consumption in the UK in 2021 <https://www.gov.uk/government/statistics/energy-consumption-in-the-uk-2021>
- [17] CCC 2022 Progress Report to Parliament <https://www.theccc.org.uk/publication/2022-progress-report-to-parliament/>
- [18] Contracts for Differences Allocation round 4 results [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1088875/contracts-for-difference-allocation-round-4-results.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1088875/contracts-for-difference-allocation-round-4-results.pdf)
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