Situating Today's Climate Activists of the 'Fridays for Future' Movement Hari Kumar 7 October, 2019

Introduction

Everywhere in September 2019, the world's capitals saw millions of the world youth on the move. All Marxist-Leninists, indeed all Marxists, likely identify with the intensity with which young people challenge the capitalist inaction on climate change. The movement known as 'Fridays for Future (FFF)', called an "Earth Strike", starting on 20th September 2019. Progressives all around the world were excited, we had not seen such a throng on the streets of newly minted progressive activists for long time. Hence, this article focuses on the Fridays for Future movement, and its ideology.

At the outset, we state our own conviction: We believe there is no doubt that there is a climate crisis, and that an unsustainable assault on the environment results from the capitalist quest for ever more profit. We take this as an irrefutable fact. All Marxist-Leninists should be in the united fronts rapidly taking shape on this.

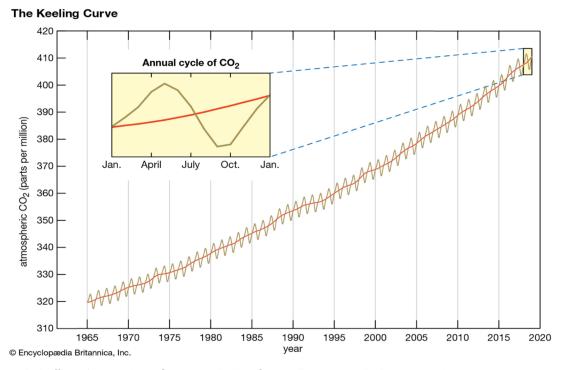
There are five aspects to this article:

- 1) Since we refer often below, to the importance of Carbon Dioxide (CO_2) as a **hot-house** gas, we review atmospheric levels of CO_2 ; intended for the science averse.
- 2) We next summarise the Fridays For Future movement.
- 3) Since the movement is inextricably linked with Greta Thunberg, we discuss some of her speech and the content of her ideology. This will inevitably confront the question of 'whether currently proposed solutions lie, between reformism and revolutionary proposals?' We also consider the Extinction-Rebellion movement, in order to ask are they a revolutionary prospect? 4) We argue, that the fossil-fuel sections of capital have conspired to undermine scientists and Climate Change movements. However, other sections of capital recognise Climate Change as a real phenomenon, that threatens profit. Further, that this more far-seeing section of capital has behind the scenes, tried to use this FFF into acceptable channels.
- 5) Finally we will consider the Left's key responses to the climate situation, including the 'degrowth movement'. Then we outline the bones of a Marxist-Leninist response to the climate crisis of today.

1. Rise of Atmospheric levels of Carbon Dioxide (CO₂)

To repeat at the start, unequivocally - humanity faces a major climate crisis. Undoubtedly one of the likely major environmental changes we face, is atmospheric CO₂. This story begins with the change in measured levels of CO₂ in the atmosphere over time. This monumental task was performed by **Charles Keeling**, who measured levels in a number of high altitude observatories, principally in Hawaii, from 1958 on. He showed that CO₂ levels from 1965 to 2019, had steadily risen (**Figure 1** -The Keeling Curve). This curve displays a predominant inexorable overall rise. But in addition saw-tooth wiggles up and down, every year year, mark the spring forest blooming across the world. In contrast to the animal kingdom, the members of the plant kingdom, including trees do not produce CO₂, rather they consume it. They use

 CO_2 as an essential fuel and by light energy, which they photosynthesize into usable energy, and produce oxygen (O_2).



John P. Rafferty; 'Atmospheric Science - Keeling Curve'; Encyclopaedia Britannica; June 2007; at: https://www.britannica.com/science/Keeling-Curve

This rise in CO_2 is traceable and dateable using measures of carbon isotopes (specific chemical hallmarks) tied to fossil fuel burning. These isotopes in the geological strata, allow their genesis to be timed in history. It was then determined by several scientists, that this steady rise in CO_2 , was a relatively new phenomenon in the Earth's geological history. The gas had began to explode upwards as soon as biological life began. But most reputable scientists and commentators also noted the close relationship between this phenomenon, and the emergence of humans.

Atmospheric levels of CO₂ have been high before. In early life history on the planet, small rises and fluctuations in atmospherics CO2, were likely the means by which the planet did not repeatedly plunge into Ice Ages. Indeed scientists observe that the Ice Ages of the past, were triggered by falls in CO₂.

But the major recent cause of this CO_2 , is the burning of '**fossil fuels**' (raw plant materials, coal, oil and various forms of gas). But another significant portion comes from the exhalations of oxygen-air-breathing (aerobic) metabolism of living things (including humans), if they are 'aerobic' and therefore metabolise oxygen (O_2) into CO_2 .

Humans not only combust oxygen to fuel their bodies and generated CO₂. But humans also make use of nature to provide for their needs (burning either coal or timber for heat, building with nature's raw materials, clearing vegetation and forests for farming etc) thereby

accelerating the rise of CO₂. As well as producing more CO₂, the destruction of forests for fuel and building materials, had a parallel.

The Earth is a system in which there was, over geological history a self-regulating 'balance'. In more recent times this was termed by the mathematician **James Lovelock**, as '**Gaia'** (*Tim Flannery, 'The Weather Makers' 2006, Toronto; p. 13*). While this concept was initially derided as being 'mystical', it was anchored in the knowledge that for long periods, contending planetary physical forces balance out. For example, the major storage of carbon liberated from fossil fuel burning is the ocean. But heating of the earth's surface limits the ability of oceans to serve as a carbon sink. Again rises in CO₂ appear to have been tolerated in geological history for a long time, due to a balance in Gaia. Yet when the provocation of rising levels continues, it precipitates a breaking point. 'Dialectics', is a philosophy that emphasizes a balance between differing forces, but a balance that is continually changing.

Balance in Nature has increasingly been placed at threat, from humans, who disrupted key natural systems creating buffers of CO₂. For humans both consumed vast quantities of such as forests, and they disrupted oceans. Under latter day capitalism, it has become – imbalanced. If Figure 1 has not yet shocked readers, perhaps the enormous numerical magnitude of the changes of CO₂ (expressed as parts per million volume ppmv) might:

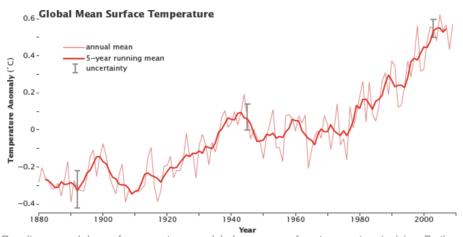
"The Keeling Curve shows an annual rise in atmospheric CO_2 concentrations... average concentrations have risen from about 316 ppmv of dry air in 1959 to approximately 370 ppmv in 2000 and 411 ppmv in 2018. Average concentrations rose by 1.3 to 1.4 ppmv per year until the mid-1970s, from which time they increased by roughly 2 ppmv per year. The year-to-year increase in atmospheric CO_2 concentrations is roughly proportional to the amount of CO_2 released into the atmosphere by the burning of fossil fuels. Between 1959 and 1982, the rate of CO_2 emissions from fossil-fuel combustion doubled from approximately 2.5 billion tons of carbon equivalent per year to 5 billion tons of carbon equivalent per year. ... approximately 57 percent of CO_2 emissions remain in the atmosphere from year to year."

John P. Rafferty; 'Atmospheric Science - Keeling Curve'; Encyclopaedia Britannica; June 2007; at: https://www.britannica.com/science/Keeling-Curve

Of itself, the levels of CO_2 themselves are no issue. However, both CO_2 and the other so-called **hothouse gases** (of which methane is the second most important), accumulate in the atmosphere. These gases do not impede the sun's light from entering, but they do impede heat from leaving the atmosphere. These gases block the radiation and diffusion of heat. This leads then to the secondary phenomenon of a global warming. But in addition, other hothouse gases - **chlorofluorocarbons** (CFCs) - destroy atmospheric ozone, which creates unpredictable holes in the atmosphere. These enable more direct sunlight thermal energy to further heat Earth, and exacerbate the problem.

Left to its own self-adjusting complex of purely physical devices, through various mechanisms, the Earth would undergo cyclic changes of temperature, including Ice Ages. We recommend

Tim Flannery's very lucid book for further details. (*Tim Flannery; ibid; pp* 36-44). It is not scare-mongering to argue that rising global tempratures will threaten humanity and all organisms. Abrupt changes of hothouse gases have taken place previously in geological time-scales, been associated with global warming. This came about as the Gaia blance was upset by two processes, which were not from human activity. The first was crashing of major asteroid collisions onto earth releasing carbon dioxide (65 million years ago); and, secondly by vast fires on the earth's surface consuming methanes (55 million years ago). It is clear is that both these processes produced CO₂, which caused high temperatures and wide-scale extinctions of life-forms including the famous dinosaurs (*Flannery Ibid;* 48; 50-53). Today we are in crisis, because of human activity. Evidence shows a rise in global mean temperatures, over the years 1880-current day (**Figure 2**):



Despite ups and downs from year to year, global average surface temperature is rising. By the beginning of the 21st century, Earth's temperature was roughly 0.5 degrees Celsius above the long-term (1951–1980) average. (NASA figure adapted from Goddard Institute for Space Studies Surface Temperature Analysis.)

"Global Warming"; NASA, data compiled by Webmaster Paul Przyborski, & NASA Official Robert Levy; for 'The Earth Observatory of the EOS Project Science Office at NASA Goddard Space Flight Center"; at https://earthobservatory.nasa.gov/features/GlobalWarming/page2.php

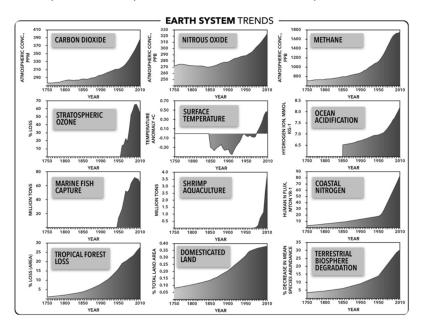
The intimate relationship between human activity and the observed historical rise in the temperature of the earth, was mediated by methane and CO₂. This was confirmed by measurements of isotopes of trapped gases in Antarctic ice-sheets. This led scientists (**Paul Crutzen** and **Eugene Stoermer**) to coin the term 'the **Anthropocene'**, starting around 1800 AD to characterise the geological era we live in (*Andrew C. Revkin; 'Confronting the 'Anthropocene'*, *New York Times, May 11, 2011; https://dotearth.blogs.nytimes.com/2011/05/11/confronting-the-anthropocene/*).

The term "the Anthropocene" refers to the enormous impact of humans upon planet Earth. **Bill Ruddiman** showed evidence of rising gases in the ice strata from 8,000 years ago – from the start of agriculture (*Flannery*; *pp. 64-65*). However, the rise in atmospheric CO₂ was most notable after the **industrial revolution**, when even greater quantities of fossil fuels were used for capitalist manufacture. Recently the Marxist **Ian Angus**, cited data from these scientists, that show that since 1950 there has been a great "acceleration" in CO₂ accumulation:

"Every trend line showed gradual growth from 1750 and a sharp upturn in about 1950. The authors said that "the last 50 years have without doubt seen the most

rapid transformation of the human relationship with the natural world in the history of the species," *Angus*, citing *Will Steffen, et al., Global Change and the Earth System, 132, 133, 258–60*

These two panel sets of graphs below (**Figure 3**), show in the upper panel the world trends of physical and agricultural changes over time; and in the second panel changes in human activity summarized as socio-economic trends. The x-axis shows the year, and a sharp inflection upwards, is seen in all these parameters around 1950:



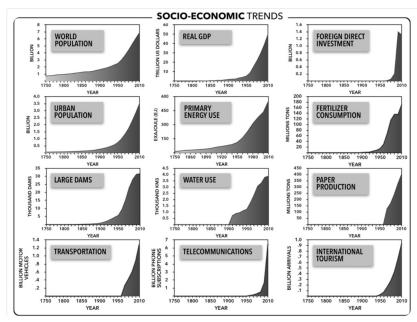


Figure 3: From Ian Angus; "When Did the Anthropocene Begin...and Why Does It Matter?"; 'Monthly Review' Sep 1 2015; at; https://monthlyreview.org/2015/09/01/when-did-the-anthropocene-beginand-whydoes-it-matter/

Such a spike upwards as the Industrial Revolution confirms the inter-relation of humanity to nature, and the completely disruptive effects of humans on the Earth's balance. What the modern-day climate scientist **Julia Coles** calls 'magic gates' (*Flannery Ibid p. 84*), and others term 'tipping points', and what we lay people might say are 'breaking points' - are instances of a dialectical change of quantity into quality (*Frederick Engels; 'Dialectics' in "Dialectics of Nature'; USSR; 1934; p. 62; or: https://www.marxists.org/archive/marx/works/1883/don/ch02.htm).*

We should pause to acknowledge how extraordinary it is, that this balance in nature, and its imbalance by humans - was recognised by the founders of Marxist theory and practice – **Karl Marx** and **Frederick Engels**, so early on. In their division of labour, it fell to Engels rather than Marx (then busy on 'Capital') to explore the 19th century revolution in the physical and biological sciences. Engels summarized the exploration of nature in the following way:

"Nature is the proof of dialectics, and it must be said for modern science that it has furnished this proof with very rich materials increasingly daily, and thus has shown that, in the last resort, Nature works dialectically and not metaphysically; that she does not move in the eternal oneness of a perpetually recurring circle, but goes through a real historical evolution." Frederick Engels, "Socialism: Utopian and Scientific" – 'II [Dialectics]'; https://www.marxists.org/archive/marx/works/1880/soc-utop/ch02.htm

We have discussed the views on nature and man held by both Marx and Engels, previously (https://theredphoenixapl.org/2018/04/29/200-years-on-from-his-birth-may-5th-1888-to-may-5th-2018-was-marx-right/) and (http://ml-review.ca/aml/Lysenko/LysenkoPT3.htm). So as not to unduly lengthen this article, we will here simply point out that both Marx and Engels, fully recognised that human activity had altered the environment, and not for the good:

"Let us not, however, flatter ourselves overmuch on account of our human victories over nature. For each such victory nature takes its revenge on us. Each victory, it is true, in the first place brings about the results we expected, but in the second and third places it has guite different, unforeseen effects which only too often cancel the first. The people who, in Mesopotamia, Greece, Asia Minor and elsewhere, destroyed the forests to obtain cultivable land, never dreamed that by removing along with the forests the collecting centres and reservoirs of moisture they were laying the basis for the present forlorn state of those countries. When the Italians of the Alps used up the pine forests on the southern slopes, so carefully cherished on the northern slopes, they had no inkling that by doing so they were cutting at the roots of the dairy industry in their region; they had still less inkling that they were thereby depriving their mountain springs of water for the greater part of the year, and making it possible for them to pour still more furious torrents on the plains during the rainy seasons. Those who spread the potato in Europe were not aware that with these farinaceous tubers they were at the same time spreading scrofula. Thus at every step we are reminded that we by no means rule over nature like a conqueror over a foreign people, like someone standing outside nature – but that we, with flesh, blood and brain, belong to nature, and exist in its midst, and

that all our mastery of it consists in the fact that we have the advantage over all other creatures of being able to learn its laws and apply them correctly." Engels, 'The Part played by Labour in the Transition from Ape to Man'; https://www.marxists.org/archive/marx/works/1876/part-played-labour/index.htm

"Very interesting is the book by Fraas (1847): Klima und Pflanzenwelt in der Zeit, eine Geschichte beider [Climate and the Plant World throughout the Ages, a History of Both], namely as proving that climate and flora change in historical times. He is a Darwinist before Darwin; and admits even the species developing in historical times. But he is at the same time agronomist. He claims that with cultivation – depending on its degree – the "moisture" so beloved by the peasants gets lost (hence also the plants migrate from south to north), and finally steppe formation occurs. The first effect of cultivation is useful, but finally devastating through deforestation... The conclusion is that cultivation – when it proceeds in natural growth and is not consciously controlled (as a bourgeois he naturally does not reach this point) – leaves deserts behind it, Persia, Mesopotamia, etc., Greece. So once again an unconscious socialist tendency!" Marx to Engels: Marx-Engels Correspondence 1868 Letter from Marx to Engels In Manchester 25 March, 1868; Gesamtausgabe, International Publishers, 1942; https://www.marxists.org/archive/marx/works/1868/letters/68 03 25-abs.htm Selected Correspondence

And capital, in its cease-less quest for more profit, destroys all before it:

"Capital creates the bourgeois society, and the universal appropriation of nature as well as of the social bond itself by the members of society..... For the first time, nature becomes purely an object for humankind, purely a matter of utility; ceases to be recognized as a power for itself; and the theoretical discovery of its autonomous laws appears merely as a ruse so as to subjugate it under human needs, whether as an object of consumption or as a means of production. In accord with this tendency, capital drives beyond national barriers.... It is destructive ... and constantly revolutionizes it, tearing down all the barriers which hem in the development of the forces of production, the expansion of needs, the all-sided development of production, and the exploitation and exchange of natural and mental forces."

Marx, Grundrisse; Penguin edition; London; 1973), pp. 409-410.

"[t]he development of culture and of industry in general has evinced itself in such energetic destruction of forest that everything done by it conversely for their preservation and restoration appears infinitesimal."

Marx K, Capital Volume 2 (p.248)

To return to the present day, clearly the CO₂ drive impelled by profit remains intense:

"The most recent worldwide data from the International Energy Agency (IEA) indicate that global CO₂ emissions were around 32 billion tons in 2015. The

reports of the Intergovernmental Panel on Climate Change (IPCC), which provide conservative benchmarks for what is required to stabilize the average global need to fall by about 40 per cent within twenty years, to 20 billion tons per year, and by 80 per cent as of 2050, to 7 billion tons."

Robert Pollin; "Debating Green Strategy—4 . De-Growth Vs A Green New Deal "; New Left Review; Number 112; July-August 2018; London.

2. Climate Change Deniers

However, until the present time, vigorously denying climate change, has been the norm for that section of that capitalist class whose profits depend upon a blatant disregard of the environment. While all manufacturing based industries to some extent fall in this camp, there are more obvious industries at pains to deny climate change. These are mainly industries based in oil, gas (including fracking), coal extraction, and the timber and agribusiness industries.

Liberals decry what they term 'conspiracist' theories of how the bourgeoisie effect their rule. But the ideological battle around climate change – epitomises how profiteers hijack scientists and sponsor blatantly biased and untrue 'science'. This section of capital has employed a captive and compliant scientist stable, which regularly spits out 'scientific refutations' of the phenomenon of climate warming. In the USA, this is the story of how the **Koch Brothers** mobilized a hugely wealthy coalition of billionaires, to obstruct any progressive reforms. Details, exposed by Jane Mayer in her book, "Dark Money"; New York 2016) are instructive:

"Charles and David Koch – the Koch Brothers .. owned virtually all of what would become ... the second largest private company in America. They owned four thousand miles of pipeline, oil refineries in Alaska, Texas, and Minnesota, the Georgia-Pacific lumber and paper company, coal and chemicals and were huge traders in commodity futures.. The two brothers (were) the 6th and 7th wealthiest men in the world. Each was worth an estimated \$14 billion in 2009": *p. 2*Of particular importance to the Kochs,.. Was drumming up support from other business leaders for their environmental fights. The Kochs vehemently opposed the government taking any actions on climate change that would hurt their fossil fuel profits.. " *p.7*

No fewer than eighteen billionaires... were among the "doers" joining the Kochs' clandestine opposition movement during its first term of Obama's Presidency": p. 9. "Coal, oil and gas magnates formed the nucleus of the Koch donor network" p.200. Jane Mayer Ibid.

While this coalition comprising the top 0.1 % wealthiest of the population, mobilised along a broad range of every and any ideological issue – from law, education, to suppression of privacy rights, worker rights etc. – we consider only their anti-environmental strategy. By at least 2007, reputable scientists had understood that climate change was a major problem. For example the **American Association for the Advancement of Science (AAAS)** warned:

"Average global temperature has increased by about 1.4°F over the past 100 years. Sea level is rising, and some types of extreme events—such as heat waves and heavy precipitation events— are happening more frequently. Recent scientific findings indicate that climate change is likely responsible...As global temperatures rise, there is a real risk, however small, that one or more critical parts of the Earth's climate system will experience abrupt, unpredictable, and potentially irreversible changes."

The AAAS Climate Science Panel: Chairs: Mario Molina, James McCarthy, Diana Wall; "What We Know - The Reality, Risks, And Response To Climate Change"; Woods Hole, 2007; at: https://whatweknow.aaas.org/wp-content/uploads/2014/07/whatweknow_website.pdf

It was critical for their profits, that the Koch plutocrat gang to organise a counter. The problem they tackled was the growing public awareness of the need to intensify regulation of environmental pollution and industry. They proceeded to use a lot of money to subvert societal understanding of the real forces at play:

"The fossil fuel organized and financed a stealthy state-of-the-art counteroffensive. ... from 2005-2008, a single source, the Kochs, poured almost \$25 million into dozens of organisation fighting climate reform. The sum was staggering.. outspending what was then the world's largest public oil company, ExxonMobil by a factor of three... **Robert Brulle**.. discovered that between 2003-20110 over half a billion dollars was spent on... a massive "campaign to manipulate and mislead the public about the threat posed by climate change".. (and) a corporate lobbying scheme disguised as a tax-exempt philanthropic endeavor. Some 140 conservative foundations funded this campaign... distributing \$558 million in the form of 5,299 grants... to think tanks, advocacy groups, trade associations, foundations, and academic and legal programs"; *Mayer Ibid p. 204-5*

This was done using front organisations, mainly one called Donors Trust (*pp. 206-207*). To attack leading scientists such as **Michael Mann**, they funded **Fred Seitz**, **Fred Singer**, **Sallie Baliunas** and **Wei-Hock "Willie" Soon** (*p.208*; *210*). None of this is at all surprising. Scientists and intellectual workers are no different from other parts of society, as **Marx and Engels** in '**The Communist Manifesto**' make clear:

"The bourgeoisie has stripped of its halo every occupation hitherto honoured and looked up to with reverent awe. It has converted the physician, the lawyer, the priest, the poet, the man of science, into its paid wage labourers." Marx and Engels, 'The Communist Manifesto"; I. Bourgeois and Proletarians; 1848; Marx/Engels Selected Works, Vol. One, Progress Publishers, Moscow, 1969, pp. 98-137; at https://www.marxists.org/archive/marx/works/download/pdf/Manifesto.pdf

Elsewhere Marx talks about historians becoming 'servants' of the bourgeoisie:

"Ignorant louts like Heinzen, who deny not merely the class struggle but even the existence of classes, only prove that, despite all their

blood-curdling yelps and the humanitarian airs they give themselves, they regard the social conditions under which the bourgeoisie rules as the final product, the *non plus ultra* [highest point attainable] of history, and that they are only the servants of the bourgeoisie. And the less these louts realize the greatness and transient necessity of the bourgeois regime itself the more disgusting is their servitude...."

Marx to J. Weydemeyer in New York; March 5, 1852

https://www.marxists.org/archive/marx/works/1852/letters/52 03 05-ab.htm

Our modern climate denier 'scientists', behave as the vulgar economists who 'prostituted' their science, as Engels put it:

"the official German economists... more or less all belong to the "vulgar economists"; they have prostituted their science for the sake of momentary popularity and denied its great classical exponents. They Speak of "harmonies" and wallow in the most banal contradictions. May the severe lesson given them in this book serve to awaken them from their lethargy, to recall to them that political economy is not merely a milchcow providing us with butter but a science demanding serious and zealous application." Frederick Engels; Review of Volume One of Capital for the Zunkunft;; in supplement to Die Zunkunft, No. 254, October 30, 1867 https://www.marxists.org/archive/marx/works/1867/reviews-capital/zukunft.htm

Such 'scientists' in economics, had become "defenders in doctrinaire fashion", says Marx:

"Vulgar economy actually does no more than interpret, systematise and defend in doctrinaire fashion the conceptions of the agents of bourgeois production who are entrapped in bourgeois production relations".

Marx Capital Volume III": 'The Revenues and their sources"; London 1991 edition; p. 956.

Perhaps even those who are determined to avoid, what they derogatively label as "conspiracy theory" – might have to agree that the Kochs fomented a conspiracy. As an aside, it is useful to know how the CIA has fostered an approach in various medias, to disapprove of 'conspiracy theory':

"The CIA's campaign to popularize the term "conspiracy theory" and make conspiracy belief a target of ridicule and hostility must be credited, unfortunately, with being one of the most successful propaganda initiatives of all time."

Lance deHaven-Smith, Conspiracy Theory in America. Austin: Univ of Texas Press, 2013, p. 25.

"Cass Sunstein, soon to be appointed to the White House Office of Information and Regulatory Affairs) argued that "... government agents... might enter chat rooms, online social networks, or even real-space groups and attempt to undermine percolating conspiracy theories by raising doubts about their factual premises, causal logic or implications for political action".

Sunstein and Vermuele 2009; cited by review by: Ginna Husting; Contemporary Sociology, Vol. 44, No. 2 (March 2015), pp. 191-193.

Bear this in mind when we later discuss some aspects of **Greta Thunberg**.

3. Origins of the 'Friday For Future' movement

The FFF movement started in August 2018, after a then 15 year old Greta Thunberg, had sat in front of the Swedish parliament every day for 3 weeks. She held up a sign that read

"Skolstrejk för klimatet" ("School strike for the climate").

Thunberg's social postings went viral, and on the 8th September 2018, she decided to 'strike' from school every Friday. Her target was to pressure Sweden to conform to the Paris Agreement target of reduced carbon emissions. She was inspired she said, by the youth at "the March for our Lives gun control protests that began after the Parkland school shooting." (Editorial; "The Guardian view on teenage activists: protesters not puppets"; 7 Feb 2019; https://www.theguardian.com/commentisfree/2019/feb/07/the-guardian-view-on-teenage-activists-look-whospulling-the-strings)

Rapidly this school strike movement became world wide, and by the end of 2018, school children in 270 cities had 'struck'. Such determination, was in the face of much ridicule and patronisation by conservative politicians. For example the Australian PM Scott Morrison said "more learning in schools and less activism" was needed (*Bard Wilkinson*, *Australian school children defy prime minister with climate strike'; CNN November 30, 2018; at:* https://web.archive.org/web/20190228104642/https://edition.cnn.com/2018/11/30/australia/australia-school-climate-strike-scli-intl/index.html)

By February 2019, the movement had forced the resignation of the Belgian environment minister for Flanders, Joke Schaivliege - who had falsely claimed (i.e lied) that the state security state had proof that outside adults had engineered this (*Boffey, Daniel (2019-02-05)*. "Belgian minister resigns over school-strike conspiracy claims". The Guardian; February 5th 2019; https://www.theguardian.com/world/2019/feb/05/belgian-environment-minister-joke-schauvliege-claimed-children-climate-protests-a-set-up). Rapidly thereafter the movement spread and by March 2019, over 1.4 million children in over 2,000 cities worldwide had struck on a Friday (*Wikepiedia at https://en.wikipedia.org/wiki/School_strike_for_climate#cite_note-boffey-2019-26*).

By March 2019, a call was issued by an organizing group, including Thunberg, stated:

"We, the young, are deeply concerned about our future. Humanity is currently causing the sixth mass extinction of species and the global climate system is at the brink of a catastrophic crisis. Its devastating impacts are already felt by millions of people around the globe. Yet we are far from reaching the goals of the Paris agreement.

Young people make up more than half of the global population. Our generation grew up with the climate crisis and we will have to deal with it for the rest of our lives. Despite that fact, most of us are not included in the local and global decision-making process. We are the voiceless future of humanity.

We will no longer accept this injustice. We demand justice for all past, current and future victims of the climate crisis, and so we are rising up. Thousands of us have taken to the streets in the past weeks all around the world. Now we will make our voices heard. On 15 March, we will protest on every continent."

(Letter of 'The Global Coordination Group of the Youth-led Climate Strike; "Climate crisis and a betrayed generation"; The Guardian; 1 March 2019; at: https://www.theguardian.com/environment/2019/mar/01/youth-climate-change-strikers-open-letter-to-world-leaders).

The hopes of Thunberg to mobilise youth have been realized. In addition many scientists and influential personalities have supported the movement also (*Wikipedia Ibid*). Soon the movement became formalized into the FFF.

Already the FFF has achieved a great deal for humanity by heightening people's awareness of the threats of climate change. One mark of this, was the Amnesty International's 'Ambassador of Conscience' award, given on 7 June 2019, to 'Fridays for Future', and to Greta Thunberg. Secretary General Kumi Naidoo said:

"We are humbled and inspired by the determination with which youth activists across the world are challenging us all to confront the realities of the climate crisis. Every young person taking part in Fridays for Future embodies what it means to act on your conscience. They remind us that we are more powerful than we know and that we all have a role to play in protecting human rights against climate catastrophe." (*Wikipedia Ibid*)

Undoubtedly this is true, and both Thunberg and the FF have made a huge impact for progressive causes. Again Marxists need to be a part of this movement. But at the minimum, it is not churlish to point out that thus far, there has been a simplistic avoidance of key class issues underlying the climate change crisis.

4. Ideology of the FFF movement - Systemic versus individual change

At bottom, the mainstream of the current environmental movement is largely a reformist, and still, often a spontaneous bubbling-up. By and large, it has not taken any semblance of a revolutionary character. One obvious weakness is that the movement is still, despite Thunberg's prominence, largely leaderless. Thunberg is definitely inspiring, and a young woman of remarkable conviction and intent.

Yet only sporadically does the challenge of the FFF become explicitly anti-profiteering. Mostly, the movement takes the shape of an un-focused rejection of the symptoms of climate change, not a focused anti-capitalist movement. Despite a deep alienation from the norms of capitalist society, it has not yet cohered into a consistent philosophy capable of overcoming capital. Episodically, an accurate targeting of the capitalist class does occur.

For example, at some moments Thunberg shows she understands the responsible role of the rich, for having created the climate crisis. In a speech to the "Brilliant Minds conference", on June 18 2019, Stockholm, Thunberg shows this in repeated phrases:

"It is not people in countries like Mozambique, Bangladesh or Colombia who are most responsible for this crisis. It is mostly down to people like you here in the audience. Entrepreneurs, celebrities, politicians, business leaders. People who have a lot of power. People who consume enormous amounts of stuff. Who often fly around the world, sometimes in private jets. Your individual carbon footprints are in some cases the equivalent of whole villages. But the worst part I think is that you are normalizing this extreme lifestyle. Because people look up to you. You are the role models, you are setting the standards. People aspire to be like you. About 100 companies emits approximately 71% of our total emissions of CO_2 We need to be brave enough to say and do things that may not increase our profit, or our popularity....

We need to start thinking outside the box. To acknowledge that we don't have all the solutions to the climate and ecological crises yet, unless those solutions mean that we simply stop doing certain things. We need to accept that the market and new technologies will not solve everything for us. We need to admit our common failure. And then we need to act, while there's still time...."

Greta Thunberg; Speech at Brilliant Minds conference in Stockholm"; originally posted on Facebook; re-printed at Monthly Review On-line; 23 September 2019; at: https://mronline.org/2019/09/23/greta-thunberg-speech/

Hence she also sees that the impact of the climate crisis upon the peoples of the dependent or neo-colonial countries is particularly severe. And that neither "the market" nor obtaining "profits" will solve the crisis. Moreover, Thunberg has also above, correctly labeled the "top 100 companies" as the leading polluters. However the solution she sees is purely, an individual decrease of consumption. While this is in the above speech noted, targeting the "people with a lot of power"; more generally she applies it across the board of humanity.

It is true that she also quite clearly sees the need for 'systems change', rather than an 'individual change'. Yet Thunberg largely **emphasises** individual change, because "all the big changes in the world have been started by people at the grass-roots level":

"And yes I know, we need a system change rather than individual change. But you can not have one without the other. If you look through history all the big changes in society have been started by people at the grassroots level. No system change can come without pressure from large groups of individuals."

Thunberg is right that an impetus from below ("people at the grassroots") has always been vital. This has been a consistent point she has made:

"Last December, at the UN Climate Change Conference in Poland.. (she said): "We have not come here to beg world leaders to care. You have ignored us in the past and you will ignore us again. You've run out of excuses and we're running out of time. We've come here to let you know that change is coming whether you like it or not..... The real power belongs to the people."

Michael Barker; "Greta Thunberg In Review"; Counter Punch October 4, 2019; at: https://www.counterpunch.org/2019/10/04/greta-thunberg-in-review/

However effectively, she and the FFF, largely **hand back** key decisions to the capitalists. For example, Greta it is true that excoriated the assembled members of the UN in September 2019:

"My message is that we'll be watching you....

You have stolen my dreams and my childhood with your empty words," a visibly emotional Thunberg said.

"The eyes of all future generations are upon you. And if you choose to fail us I say we will never forgive you. We will not let you get away with this. Right here, right now is where we draw the line."

Oliver Milman; "Greta Thunberg condemns world leaders in emotional speech at UN"; The Guardian 23 September 2019; **at** https://www.theguardian.com/environment/2019/sep/23/greta-thunberg-speech-un-2019-address

She ended with an 'ultimatum', saying:

"We will not let you get away with this. Right here, right now is where we draw the line. The world is waking up. And change is coming, whether you like it or not."

Transcript: Greta Thunberg's Speech At The U.N. Climate Action Summit, National Public radio; September 23, 2019; at: https://www.npr.org/2019/09/23/763452863/transcript-greta-thunbergs-speech-at-the-u-n-climate-action-summit?t=1569583556085

However essentially she has concluded by saying: "Do better, we are watching". This is only an invitation to repeat the on-going plunder of nature for the profits of the ruling class, or those that are nowadays identified by the youth as "the 1%".

Thunberg is not aware of other more fundamental impetuses for change, than 'individual change'. She is especially not aware of a main driver being technological change. Her mis-reading of history, ignores the Marxist view of the drivers of change, but then she never claimed to be a Marxist. But it is reasonable to remind ourselves here, of the motive forces of change. Marx put it succinctly here, that "the changes in the economic foundation lead sooner or later to transformation":

"In the social production of their existence, men inevitably enter into definite relations, which are independent of their will, namely relations of production appropriate to a given stage in the development of their material forces of production. The totality of these relations of production constitutes the economic

structure of society, the real foundation, on which arises a legal and political superstructure and to which correspond definite forms of social consciousness. The mode of production of material life conditions the general process of social, political and intellectual life. It is not the consciousness of men that determines their existence, but their social existence that determines their consciousness. At a certain stage of development, the material productive forces of society come into conflict with the existing relations of production or – this merely expresses the same thing in legal terms – with the property relations within the framework of which they have operated hitherto. From forms of development of the productive forces these relations turn into their fetters. Then begins an era of social revolution. The changes in the economic foundation leads sooner or later to the transformation of the whole immense superstructure."

Karl Marx 1859; 'Preface to a Contribution to the Critique of Political Economy"; https://www.marxists.org/archive/marx/works/1859/critique-pol-economy/preface.htm

Since Thunberg is not a Marxist, when she turns to solutions, she is only left with an individual appeal to the capitalists and to "the richest 10% of the world's population" to reduce their CO2 emission:

"If you regularly fly around the world, eat meat and dairy and are living a high carbon lifestyle then that means you have used up countless of people's remaining carbon budgets. Carbon budgets that they will need in their everyday life, for generations to come. And if that wasn't enough, those who's carbon budgets we are stealing are the ones least responsible and the ones who are going to be affected the most by this crisis. According to climate scientist Kevin Anderson, if the richest 10% of the world's population would lower their emissions to that of the average citizen of the European Union, then the world's emissions of CO2 would be cut by about one third. I think we can safely say that everyone in this room belong to that 10%. Including me. Everyone and everything needs to change. But the bigger your platform, the bigger your responsibility. The bigger your carbon footprint, the bigger your moral duty." Greta Thunberg; Speech at Brilliant Minds conference in Stockholm"; origionally posted on facebook; reprinted at Monthly Review On-line; 23 September 2019; at: https://mronline.org/2019/09/23/greta-thunberg-speech/

She explicitly "does not blame them", she thinks that they are "simply uninformed":

"And no, I don't blame you. I know you are not acting like this because you are stupid. You are not ruining the biosphere and future living conditions for all species because you are evil. At least I hope not. I know that almost everyone of you are simply uninformed. Just like the rest of the world's population."

Greta Thunberg; Speech at Brilliant Minds conference in Stockholm"; originally posted on facebook; re-printed at Monthly Review On-line; 23 September 2019; at: https://mronline.org/2019/09/23/greta-thunberg-speech/

To reiterate, Thunberg and her colleagues are remarkable people. However, because they have are somewhat unclear about the forces at work, they are vulnerable to missteps, and being mis-led.

5. Ideology of the Extinction-Rebellion (XR) movement – Pushing the governmental boundary by Citizen Assemblies and Willingness to be arrested

It is necessary also to consider **Extinction-Rebellion (XR)**, to see if they have a more revolutionary context. This grouping have again, been remarkably successful in drawing people's attention to the major climate issues: (*Alex Marshall: 'Arrest Us, Please! Extinction Rebellion's Path to Success"; at: New York Times; 9 October, 2019;*

https://www.nytimes.com/2019/10/08/world/europe/extinction-rebellion-london-greta.html).

This movement began in the United Kingdom (UK):

"Extinction Rebellion was established in the United Kingdom in May 2018 with about one hundred academics signing a call to action in support in October 2018, and launched at the end of October by Roger Hallam, Gail Bradbrook, Simon Bramwell, and other activists from the campaign group Rising Up!

Citing inspiration from grassroots movements such as Occupy, Gandhi's Satyagraha, the suffragettes, Gene Sharp, Martin Luther King and others in the civil rights movement, Extinction Rebellion wants to rally support worldwide around a common sense of urgency to tackle climate breakdown. A number of activists in the movement accept arrest and imprisonment, similar to the mass arrest tactics of the Committee of 100 in 1961. (This was a British anti-war group. It was set up in 1960 with a hundred public signatories by Bertrand Russell, Ralph Schoenman, Michael Scott, and others. Its supporters used mass nonviolent resistance and civil disobedience to achieve their aims.)

On 9 December 2018, a second open letter of support signed by another hundred academics was published."

https://en.wikipedia.org/wiki/Extinction_Rebellion#Manifesto

They somewhat optimistically state of themselves:

- 6. "We welcome everyone and every part of everyone—working actively to create safer and more accessible spaces.
- 7. We actively mitigate for power—breaking down hierarchies of power for more equitable participation.
- 8. We avoid blaming and shaming—we live in a toxic system, but no one individual is to blame.
- 9. We are a non-violent network using non-violent strategy and tactics as the most effective way to bring about change.
- 10. We are based on autonomy and decentralisation—we collectively create the structures we need to challenge power. Anyone who follows these core

principles and values can take action in the name of Extinction Rebellion." https://en.wikipedia.org/wiki/Extinction_Rebellion#Manifesto

They have become 'international', but expressly call themselves 'apolitical':

"Extinction Rebellion is an international apolitical network using non-violent direct action to persuade governments to act justly on the Climate and Ecological Emergency". https://rebellion.earth/the-truth/demands/

They have three demands in the UK, where they started:

"We have three demands in the UK:

- 1. Tell the truth Government must tell the truth by declaring a climate and ecological emergency, working with other institutions to communicate the urgency for change.
- 2. Act Now Government must act now to halt biodiversity loss and reduce greenhouse gas emissions to net zero by 2025.
- 3. Beyond Politics Government must create and be led by the decisions of a Citizens' Assembly on climate and ecological justice."

 https://rebellion.earth/the-truth/demands/

In addition, to formalize this they organise at the level of Members of Parliament in local ridings, to ask for a "Climate and Ecological Emergency Declaration, Emissions Target and Citizens Assembly' Bill to be presented to Parliament that consists of several demands, which starts by mandating the Prime Minister's responsibilities in the climate crisis:

"Require the Prime Minister to declare a climate and ecological emergency and specify the objective of ensuring that the UK achieves net zero emissions of greenhouse gasses and halts the extinction of species in the UK by 2025;

to place duties on the Secretary of State to achieve the objective by the target date;

to establish a Citizens' Assembly to advise on steps to be taken to achieve the objective by the target date;

to place duties on the Committee on Climate Change in connection with that Assembly; and for connected purposes."

https://drive.google.com/file/d/1dXZif0DtyUkwUwQvj6XRQbFY_QwwoIUK/view

They state that the Citizen's Assemblies are critical., and they describe them as "innovative processes":

"Citizens' Assemblies are innovative processes that can empower people, communities and entire countries to make important decisions in a way that is fair and deeply democratic.

The Citizens' Assembly on Climate and Ecological Justice will bring together ordinary people to investigate, discuss and make recommendations on how to respond to the climate emergency. Similar to jury service, members will be randomly selected from across the country. The process will be designed to ensure that the Assembly reflects the whole country in terms of characteristics such as gender, age, ethnicity, education level and geography. Assembly members will hear balanced information from experts and those most affected by the emergency. Members will speak openly and honestly in small groups with the aid of professional facilitators. Together they will work through their differences and draft and vote on recommendations.

The Citizens' Assembly will be run by non-governmental organisations under independent oversight. This is the fairest and most powerful way to cut through party politics. It will empower citizens to actually work together and take responsibility for our climate and ecological emergency.

This isn't pie in the sky – it's proven practice. Citizens' Assemblies around the world have shown that ordinary people can understand complex information, weigh the options, and make informed choices. Examples include Ireland, Canada, Australia, Belgium and Poland."
https://rebellion.earth/the-truth/demands/

By now, there may be visions of People's Soviets, or the Peoples Assemblies of the French Revolution. However, examined more closely, it appears to be simply an adjunct to standard operating procedures for capitalist government. For example, in British Columbia, Canada, the process is decided as below:

"The proposal to convene this Citizens' Assembly was part of a package of government reforms that the Liberal party offered in its 2001 election platform. This unorthodox initiative was the party's response to a decade of increasing dissatisfaction with the existing electoral system.....

Though an unorthodox body, the Citizens' Assembly was a creature of normal legislative authorization. In 2002, the newly elected provincial government appointed a former legislator and Liberal party leader to recommend a format for the assembly. Months after his report was submitted, the government appointed the assembly's chair, and submitted a motion to the Legislature to establish the assembly. On April 2003, the motion was approved unanimously, and a special committee of the legislature was set up to monitor the set up of the assembly and its work. The assembly would include 158 British Columbia residents—two for each riding, be staffed by a chair and secretariat, work all through the year 2004, and be granted a budget of \$5.5 million to conduct this business. "For the first time in our nation's history, we are providing voters with the opportunity to decide for themselves how we elect our MLAs -- how they should elect those who sit in the legislature to represent them," said premier Gordon Campbell."

Case: British Columbia Citizens' Assembly on Electoral Reform; at: https://participedia.net/case/1;

Again, this ecological movement has achieved a great deal to propagandize for a serious approach to the environment. But in appealing to mass arrests, and to this type of Citizens Assemblies – they only resort to an appeal to the conscience of the capitalist. This has not previously proven to be a useful strategy.

6. The Section of capital that does believe in limiting climate change crisis effects We earlier saw that one predominant section of the world capitalists have propagated the myth that there is no such thing as Climate Change, or Global Warming. To call this what it is – it is a **conspiracy**. In particular, this section of the class has vested profits in oil, gas, and large scale monocrop agricultural plantation farming, and cattle industry.

But they have been **opposed** by another section. Marx described some of the splits within the ruling class, arise as a section seeks to secure its "continued existence":

"A part of the bourgeoisie is desirous of redressing social grievances in order to secure the continued existence of bourgeois society.

To this section belong economists, philanthropists, humanitarians, improvers of the condition of the working class, organisers of charity, members of societies for the prevention of cruelty to animals, temperance fanatics, hole-and-corner reformers of every imaginable kind."; Karl Marx and Frederick Engels Manifesto of the Communist Party"; in 'III. Socialist and Communist Literature; 2. Conservative or Bourgeois Socialism'; February 1848; Marx/Engels Selected Works, Vol. One, Progress Publishers, Moscow, 1969, pp. 98-137; https://www.marxists.org/archive/marx/works/download/pdf/Manifesto.pdf

In fact a significant section of the world capitalist class is very well aware that global warming and all its attendant miseries is a real phenomenon. More to their own point, they recognize that it carries huge risks for not only the world's population, but also their own profits.

Perhaps the first set of more recent capitalist voices to speak out against global warming, called themselves, 'The Club of Rome'. This was founded in 1968 by the

Italian Industrialist **Aurelio Peccei**, an Italian industrialist, and **Alexander King**, a Scottish scientist. They gathered a group of "current and former heads of state, UN bureaucrats, high-level politicians and government officials, diplomats, scientists, economists, and business leaders from around the globe". The group sponsored computer simulations of consequences of the adverse interactions of "population, food production, industrialization, pollution, and consumption of nonrenewable natural resources". 'The Limits to Growth' was published in 1972, sponsored by Volkswagen Foundation. (https://en.wikipedia.org/wiki/Club of Rome; and https://en.wikipedia.org/wiki/The Limits to Growth).

This work concluded that:

"Given business as usual, i.e., no changes to historical growth trends, the limits to growth on earth would become evident by 2072, leading to "sudden and uncontrollable decline in both population and industrial capacity". This includes the following:

Global Industrial output per capita reaches a peak around 2008, followed by a rapid decline;

Global Food per capita reaches a peak around 2020, followed by a rapid decline Global Services per capita reaches a peak around 2020, followed by a rapid decline

Global population reaches a peak in 2030, followed by a rapid decline." *Ibid*.

In fact the Club of Rome in an update 30 years later, acknowledged they had erred in estimating a world run-out of oil by 1992:

"What *The Limits to Growth* actually has is (a) table, which has the *current* reserves (that is no new sources of oil are found) for oil running out in 1992 assuming constant exponential growth. In *Limits to Growth: The Thirty Year Update* there are several pages explaining that new resources are found over time and that the *current* reserves therefore change but that ultimately resources are finite." (*ibid*).

Nonetheless, their overall analysis over 30 years did not change. While there has been a storm of pro and con arguments over the years, the legacy has been somewhat mixed. Recently there has been a more positive evaluation of the catastrophist views of 'Limits to Growth':

"Forty-five years ago ... The Limits to Growth was published for the Club of Rome. It suggested that a combination of pollution accumulation and depletion of non-renewable resources—driven by income and population growth—would result in global overshoot, immediately followed by economic and demo- graphic collapse. The impact of The Limits to Growth cannot be overstated, in terms of inspiring later integrated modelling as well as creating broader support for environmental policy. Jeroen C. J. M. van den Bergh A third option for climate policy within

potential limits to growth"; Nature Climate Change, Vol 7, February 2017, pp107-112

Another, but much more recent example of a representative of the more far-sighted capitalists, is **Sir Nicolas Stern**. His report in 2007 was seen as a wake-up call by international financial and non-fossil fuel (oil, coal, gas) capital. But it may still have fallen on too many deaf ears, as action was slow. His statistical methodology, with their assumptions, has been critiqued by many, including Marxists (*Michael Roberts Blog at:* https://thenextrecession.wordpress.com/2018/10/09/climate-change-and-growth-nordhaus-and-romer/). In fact by 2015, even Stern had himself implicitly, acknowledged the limitations of the modeling used; and, moreover that his report was far too cautious in its recommended targets:

"As previously mentioned, the Stern Review estimated that stabilization of atmospheric concentrations of greenhouse gases at between 500 and 550ppm of carbon-dioxide- equivalent would cost the equivalent of about 1% of global GDP per year. However, allowing concentrations to reach 550 ppm now seems to be too dangerous, and it is desirable to set a limit of no more than 500 ppm to have a reasonable chance of avoiding a rise in global average temperature of more than 28C. " Stern N. 2015 Economic development, climate and values: making policy. Proc. R. Soc. B 282: 20150820.

Nonetheless, a general shift in the leadership of countries, appeared to signify a need to limit climate change global warming. Hence the so-called **Paris Agreement of 2016**:

"The **Paris Agreement** is an agreement within the United Nations Framework Convention on Climate Change (UNFCCC), dealing with greenhouse-gasemissions mitigation, adaptation, and finance, signed in 2016... As of March 2019, 195 UNFCCC members have signed the agreement, and 186 have become party to it.

The Paris Agreement's long-term temperature goal is to keep the increase in global average temperature to well below 2 °C above pre-industrial levels; and to pursue efforts to limit the increase to 1.5 °C,... This should be done by peaking emissions as soon as possible, ... It also aims to increase the ability of parties to adapt to the adverse impacts of climate change, and make "finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development."

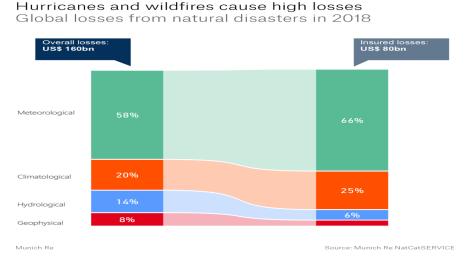
Under the Paris Agreement, each country must determine, plan, and regularly report on the contribution that it undertakes to mitigate global warming global warming. No mechanism forces a country to set a specific target by a specific date, but each target should go beyond previously set targets."

https://en.wikipedia.org/wiki/Paris Agreement

Critically however, each country "sets targets" for itself, and there was to be no monitoring. Of course, by 2017, President Trump withdrew the USA from the Paris Accord.

Despite the attempts to sideline the Paris targets, it is impossible to deny that awareness of rising costs and threats to profit-making, from the Climate Crisis, had risen. For example, the major insurance company Munich Re ("Munich Reinsurance Company is a reinsurance company based in Munich, Germany. It is one of the world's leading reinsurers."

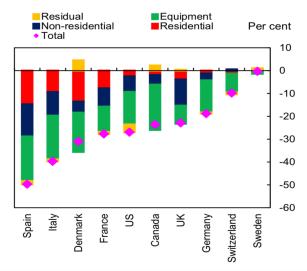
https://en.wikipedia.org/wiki/Munich_Re) shows this data of the purely 'economic' or dollar-value costs of the climate crisis, in 2018 — only from hurricanes and wildfires. Notably, only half of this dollar value was insured:



https://www.munichre.com/topics-online/en/climate-change-and-natural-disasters/natural-disasters/the-natural-disasters-of-2018-in-figures.html#&gid=1&pid=1

Another far-sighted capitalist is the Governor of the Bank of England, **Mark Carney**. His vantage point on the climate, is driven by a recognition of the lack of investment in the economies of the world, after the world capitalist economic crisis of 2007. To drive this point home he shows his graphic dismay, in a major speech ('Resolving the climate paradox'; Speech given by Mark Carney, Governor of the Bank of England Chair of the Financial Stability Board, Arthur Burns Memorial Lecture, Berlin 22 September 2016),:

Chart 4: Whole economy real investment substantially weaker than pre-crisis forecasts



Source: IMF World Economic Outlook and Bank calculations.

https://www.bankofengland.co.uk/-/media/boe/files/speech/2016/resolving-the-climate-paradox.pdf?la=en&hash=CDFB1640F4635BEC9C08601FF616C842BB975CEC

Carney lays out that in "this context, green finance is a major opportunity." He then sets out "how building new markets – in climate transition and green finance – can help resolve the tragedy of the horizon." He proceeds to warn of the huge investments needed to 'reinvent' the economy and transform losses from fuel energy into potential sources of profit, as 'green bonds':

"Financing the de-carbonisation of our economies implies a sweeping reallocation of resources and a technological revolution. The International Energy Agency estimates that globally as much as €45 trillion of investment in total could be needed in power supply and end-use efficiency to meet the two-degree target agreed in Paris. China alone is likely to require around €500 billion a year from 2016 to 2020 to finance its national environmental goals. A substantial proportion of this is likely to be raised off shore, absorbing excess global savings, helping to push up global equilibrium interest rates, and ultimately increasing global growth. With investment in long-term infrastructure assets needing to quadruple, green investment represents a major opportunity for both long-term investors and macroeconomic policymakers seeking to jump-start growth. For this to happen, however, green finance cannot conceivably remain a niche interest over the medium term.

That's why, at the request of G20 Leaders, authorities are exploring ways to mobilise private capital for green investments. During 2016, under China's G20 Presidency, a Green Finance Study Group (GFSG), undertook a stocktake of institutional and market barriers to green finance and identified ways to mobilise private capital for green investment.

For investors, green bond markets offer a stable, rated and liquid investment with long duration. For issuers, green bonds are a way to tap the huge US\$100 trillion pool of patient private capital managed by global institutional fixed-income investors. The shift to the capital markets from banks will also free up limited bank balance sheet capacity for early-stage project financing and other important infrastructure lending.

The green bond market is gradually gathering speed. Annual issuance rose from just US\$3 billion in 2012 to US\$42 billion in 2015. .. Despite this progress, total issuance still accounts for less than 1% of holdings by global institutional investors. "https://www.bankofengland.co.uk/-/media/boe/files/speech/2016/resolving-the-climate-paradox.pdf?la=en&hash=CDFB1640F4635BEC9C08601FF616C842BB975CEC

The close connection between private firms and government is obvious to Carney:

"Financial policymakers will not drive the transition to a low-carbon economy. Governments will establish the frameworks, and the private sector will make the investments. Nonetheless, financial policymakers do have a clear interest in ensuring the financial system is resilient to any transition hastened by those decisions. Our role is to help develop the frameworks for markets to adjust efficiently. " Ibid.

He urges a fast response, highlighting that the more alert of profiteers ("a vocal minority") in the marketplace are already responding fast:

"When rates are low, the present value of future returns and risks are greater. That is why a vocal minority are already calling on businesses to invest for the future, including by supporting the transition to a low carbon economy, and for investors to internalise the risks and opportunities of climate change. For example, Blackrock, the world's largest asset manager, has called on businesses to lengthen their horizons, and for all investors to take the risks and opportunities of climate change into account. Larry Fink, Chief Executive at Blackrock, sent a letter to chief executives at S&P 500 and large European corporations in February 2016. See also Blackrock, "Adapting portfolios to climate change", (September 2016). "https://www.bankofengland.co.uk/-/media/boe/files/speech/2016/resolving-the-climate-paradox.pdf?la=en&hash=CDFB1640F4635BEC9C08601FF616C842BB975CEC

Stern raised alarms for the capitalists in 2007 – yet even by 2016 Carney is worrying that the capitalist class is slow in its response. It is unsurprising that a need for more 'urgency' would be felt by even some of the capitalists. Especially given the enormous push by the Trump administration on behalf of the fossil-fuelers (http://ml-today.com/2019/08/18/trump-finance-capital/).

Therefore, it is not surprising at all, that sections of the capitalist class would seize the opportunity offered by a galvanizing youth – Greta Thunberg et al. Very likely, she and the FFF have been used by sections of the capitalist class. They are being used to grind

forward an urgency-gear shift - using pressure on the streets. In our view this does not detract from her message. But, ignoring that she and the FFF may have been 'used' to push a message of capitalist reform, however is incorrect. After all, isn't it unusual for radical movements of themselves, to be given opportunities to address the UN at the highest levels? Or the Houses of Parliament in the UK? Etc.

Recently, other, apparently more direct linkages between Thunberg and other members of the ruling classes have been pointed out by two dubious characters on the 'left' - a pro-Russian, pro-Serbian ideologist (Tony Cartalucci – see at https://www.globalresearch.ca/author/tony-cartalucci); and a near-to-climate-change denier, pro-Oil supporter (William Engadahl: see https://en.wikipedia.org/wiki/F. William Engadahl). Both Engadahl and Cartalucci wish to damage the Thunberg and FFF movements, charging that:

"Greta Thunberg's "Fridays for Future" climate movement is a fraudulent campaign aimed at the very real environmental damage being done around us... "Fridays for Future" is supported by and being advanced for the very worst environmental offenders on Earth to advance an agenda that allows for otherwise indefensible and unpopular policies — many of which will be easily delayed or redirected in the West while forced on developing nations.... The environment needs to be saved, but not by big-business' "Fridays for Future" charade." Cartalucci at https://tinyurl.com/y6c7ljem

"Whatever one may believe about the dangers of CO₂ and risks of global warming creating a global catastrophe of 1.5 to 2 degree Celsius average temperature rise in the next roughly 12 years, it is worth noting who is promoting the current flood of propaganda and climate activism."

Engdahl; "Climate and the Money Trail"; at https://www.globalresearch.ca/climate-money-trail/5690209

Other reports can be found, of linkages - for example, with Al Gore, in the conservative UK magazine "Standpoint" (https://standpointmag.co.uk/issues/june-2019/gretas-very-corporate-childrens-crusade/).

In essence all these reports argue that Thunberg is being used for profiteering, and so much so, that it discredits her public message. We believe these miss the point as to why a section of the international capitalist class find it expedient to use Thunberg.

The remarks of Engdahl and Cartalucci have irritated discussants on the Marxist Web Blog run by Louis Proyect:

"Engdahl is has been part of Lyndon Larouche's conspiracist cult for many years... Engdahl is also a global warming denialist http://rationalwiki.org/wiki/Global_warming_denialism; according to Engdahl, global warming, like peak oil, is merely a 'scare' and a 'thinly veiled attempt to

misuse climate to argue for a new Malthusian reduction of living standards for the majority of the world while a tiny elite gains more power.' ... I'm appalled to see this sort of conspiracist still being sent to the Marxism email list."

and:

"I don't give a good god-damn if Goldman-Sachs makes billions from investments in windmills, solar panels and all the rest. We have a situation now where Yupiks in Nome are having their lives destroyed because the ice is disappearing...

I think that we are headed toward massive crises because neither wing of the capitalist class is capable of what they call "de-growth".... As for Engdahl and Cartalucci, these are supporters of the most reactionary sectors of the petrochemical industry".

Such Left reactions are understandable given the history of Engdahl and Cartalucci.

However they distract from the dual key aspects, which to us appear to be that:

- (i) the FFF movement has mobilised an awful lot of people; and,
- (ii) there appears to be a section of the capitalist class whose interests lie in modifying the fossil fuel burning created environmental crisis.

These are, not mutually exclusive facts.

7. Current Proposed solutions

Uncritical left supporters of Greta Thunberg, acknowledge that her solutions are limited (to implement the Paris Agreement), but stress her "action":

"That Greta herself incorrectly believes that the implementation of the Paris Agreement will help solve the environmental crisis is beside the point. This is because what Greta stands for, first and foremost, is action, and it is up to each and everyone of us to determine what type of political action we will be taking to show solidarity with Greta and her ambition to prevent an impending climate catastrophe."

Michael Barker; 'Greta Thunberg in Review - CounterPunch.org October 4 2019; at: https://www.counterpunch.org/2019/10/04/greta-thunberg-in-review/

This stand strikes us as inadequate.

We argued above, that Thunberg largely offers only an individualist solution, epitomised by 'consume less". But her solutions, should be assessed within the framework of other solutions being proferred, that are short of revolutionary goals. In fact, the overall current range of most discussed 'solutions' rests upon a mix of reformist and utopian 'solutions'. We argue that both simply leave the power of the ruling class quite intact. This discussion is intense, but quite an old one in progressive circles and dates from the 1980s on.

These 'solutions' can usually be distilled into one of two core elements:

(i) The so-called Degrowth school (also termed zero or negative growth), which argues that a reduction of consumption of the population, thereby reducing use of the natural resources of the world, is needed. Some variants include shifts to vegetarianism. Greta Thunberg's solutions fit into this broad category.

Obviously all this is remarkably close to the 'Club of Rome' analysis. While its history extends back to many including even socialists such as William Morris, the modern proponents of this argument include Jeroen C. J. M. van den Bergh, Peter Victor, Hermann Daly. Elements are adopted by several in the overtly Marxist camp, including John Bellamy Foster, Fred Magdoff, David Harvey. More completely convinced, Andre Gorz, and recently Mark Burton, Peter Somerville advise such a path. Burton and Somerville somewhat pessimistically conclude:

"How degrowth might happen we don't know. A fortuitous combination of popular struggle and collapse of the capitalist system is perhaps the only route. That isn't to say that good governmental action, including investment in clean energy and demand-reduction measures, can't help. But for it to work, government policy would have to break from its normal mode of hand-maiden to global capital. Unrealistic? Implausible? Probably...";

Mark Burton & Peter Somerville; 'Debating Green Strategy—5 Degrowth: A Defence';' New Left Review, January-February 2019

It seems fair to us, to label these as utopian solutions. But perhaps a more accurate description is these are **neo-Malthusianism**. (We can only deal more fully with this at a later juncture).

ii) Another school proposes that it is possible to have a 'green growth'. This avenue can be achieved by increase taxes on the usage of fossil fuels, or somehow otherwise eliminate them, whilst increasing the generation of non-fossils fuel based power. The goal being to 'decouple growth' from carbon-based power. This argument within left circles, is most recently, best summarized by Pollin:

"The core feature of the Green New Deal needs to be a worldwide programme to invest between 1.5 and 2 per cent of global GDP every year to raise energy-efficiency standards and expand clean renewable-energy supplies. Through this investment programme, it becomes realistic to drive down global co₂ emissions relative to today by 40 per cent within twenty years, while also supporting rising living standards and expanding job opportunities. CO₂ emissions could be eliminated altogether in forty to fifty years through continuing this clean-energy investment project at roughly the same rate of about 1.5–2 per cent of global GDP per year. It is critical to recognize that, within this framework, a higher economic growth rate will also accelerate the rate at which clean energy

supplants fossil fuels, since higher levels of GDP will correspondingly mean a higher level of investment being channeled into clean-energy projects."

Robert Pollin; "Debating Green Strategy—4. De-Growth Vs A Green New Deal"; New Left Review; Number 112; July-August 2018; London

To be clear, Pollin's calculations are disparaged as unfeasible, by Burton and Somerville who use alternative calculations,. But Pollin also points out that the likely enormous cuts to living standards of workers should "low growth" or "no growth" be implemented, using calculations in the Canadian economy. By his sums, a no growth policy would mean a 48% cut of the 2005 Canadian per capita GDP.

Would the French Yellow Vests accept this...? Would the Quebecois workers? Surely, they would correctly see this as cutting of their living standards while the rich blithely enjoy their extravagances?

It seems fair to label Pollin's solutions as reformist. It is interesting that reformists do not propose vigorous attack on the major oil companies for instance. Yet they drive a huge portion of the carbon based pollution, purely for profit. As the Guardian writes:

"The analysis, by Richard Heede at the Climate Accountability Institute in the US, the world's leading authority on big oil's role in the escalating climate emergency, evaluates what the global corporations have extracted from the ground, and the subsequent emissions these fossil fuels are responsible for since 1965 ... The top 20 companies on the list have contributed to 35% of all energy-related carbon dioxide and methane worldwide, totalling 480bn tonnes of carbon dioxide equivalent (GtCO₂e) since 1965. Those identified range from investor-owned firms - household names such as Chevron, Exxon, BP and Shell - to stateowned companies including Saudi Aramco and Gazprom. Chevron topped the list of the eight investor-owned corporations, followed closely by Exxon, BP and Shell. Together these four global businesses are behind more than 10% of the world's carbon emissions since 1965. TwelOctober 9th 2019; at: ve of the top 20 companies are state-owned and together their extractions are responsible for 20% of total emissions in the same period. The leading stateowned polluter is Saudi Aramco, which has produced 4.38% of the global total on its own." Matthew Taylor & Jonathan Watts; "The 20 firms behind a third of all carbon emissions"; The Guardian 9 October 2019; at:https://www.theguardian.com/environment/2019/oct/09/revealed-20-firms-third-carbon-emissions:

Our purpose in this section is to simply lay out these two contending thoughts on the way forward. In fact none of these 'solutions' - neo-Malthusian or reformist – are new. It does still seem they both remain devoid of some keys to the crisis. We will at a future stage devote more time to the details of a critique, but for now, this seems lengthy enough of a piece.

8. What is missing?

For Marxist-Leninists, it seems obvious that the missing key is represented by the class struggle, and the motive sources of production. After all, much of the 'productivity; is devoted to profiteering, or does any Marxist dispute this? The profit motive rules, and for Engels, there was too *little* production at times:

"Too little is produced, that is the cause of the whole thing. But why is too little produced? Not because the limits of production – even today and with present day means – are exhausted. No, but because the limits of production are determined not by the number of hungry bellies but by the number of purses able to buy and to pay. Bourgeois society does not and cannot wish to produce any more. The moneyless bellies, the labour which cannot be utilized for profit and therefore cannot buy, is left to the death rate." Engels' Letter to Lange of 2 March 1865

It surely follows that ultimate solutions will depend upon revolutionary change. This means the sort of 'systemic changes' that can actually work. The state power must be held by the working class in the major imperialist countries and other developed countries, and workers and peasants and toilers in other countries. Only this can lead to planned economies capable of removing the profit motive for production.

We cannot alone, provide a detailed programme on the climate and environment. This requires wide class and activist discussions. But, ML-ists should also push for the reformist changes that both Pollin and Thurnberg are known for. In reality, Marxist-Leninists should absorb – but transcend the usually proffered solutions. But the climate movement of Thornberg and the FFF, are huge mobilisations. ML-ists should be an integral part of these movements.

Further to this, some of both the 'degrowth' philosophy and the Pollin School, we should draw upon.

For example, we should decrease wastage of production that is purely for profit and competition: Who needs 55 types of washing up powder available in shops? Where the class forces allow, (re) nationalization of key industries is appropriate, such as of the rail systems in the UK – to make them competitive with individual car transposrt; and widening of bus and public transport facilities etc.

We need to adopt fast - the non-fossil forms of alternative energy including photovoltaic, wind, solar energy; we need to re-forest etc. Nuclear energy remains appealing, but due

to capitalist profiteering and short-cuts to safety (see Fukishma) it remains of concern for the people to carefully monitor standard 'nuclear energy'. Recent attempts to use 'fusion; instead of 'fission' for nuclear energy, seem to be finally bearing fruit (Editorial Financial Times, London; 5 October, 2019; p. 8). Obviously the cuts to safeguard the environment made by the Trump administration need to be reversed. The moves to zero emission in a few countries, needs accelerating. Coal burning needs to be eliminated and coal workers found alternative jobs. Alternatives to single-use plastic need to be rapidly used, such as bags and straws from renewable bamboo.

As for the Greta Thunberg school of individualist change, yes, we should be enabled to divest of individual means of transportation such as cars, by much more intense public transport systems. And individual attempts at re-cycling, including composting, are only to be encouraged. But beyond that farming systems need reforming. Both Engels and Marx were clear on this:

"The abolition of the antithesis between town and country is no more and no less utopian than the abolition of the antithesis between capitalists and wage labour. From day to day it is becoming more and more a practical demand of both industrial and agricultural production,. No one has demanded this more than Liebig in his writings on the chemistry of agriculture, in which his first demand has always been that man shall give back to the land what he takes from it, and in which he proves that only the existence of the towns, and in particular the big towns, prevents this. When one observes how here in London a greater quantity of manure than is produced by the whole kingdom of Saxony is poured away every day into the sea with an expenditure of enormous sums, and when one observes what colossal works are necessary in order to prevent this manure from poisoning the whole of London, then the utopian proposal to abolish the antithesis between town and country is given a peculiarly practical basis. And even comparatively insignificant Berlin had been wallowing in its own filth for at least thirty years"; Frederick Engels 'the housing Question';

It is still quite possible, that even with a change in societal norms, we humans and the rest of nature could still be faced with potential doom. Engels recognised this, and suggested that a future communist society might have to "regulate" the reproduction of humans:

"There is of course the abstract possibility that the human population will become so numerous that its further increase will have to be checked. If it should become necessary for communist society to regulate the production of men, just as it will have already regulated the production of things, then it, and it alone, will be able to do this without difficulties. It seems to me that it should not be too difficult for such a society to achieve in a planned way what has already come about naturally, without planning, in France and Lower Austria. In any case it will be for those people to decide if, when and what they want to do about it, and what means to employ. I don't feel qualified to offer them any advice or counsel in this matter. They will presumably be at least as clever as we are. Incidentally, I wrote as early as 1844.

Deutsch-Französische Jahrbücher, page 109): ... "Friedrich Engels to Karl Kautsky; See Karl Marx and

Frederick Engels, Selected Correspondence; Moscow, 1975 p.; and at https://www.marxists.org/archive/marx/works/1881/letters/81 02 01.htm

But in the same letter, Engels immediately goes on to quote himself, that social change of society to socialism – was necessary – <u>if</u> Malthus had in fact been right in his mathematical assertions that the population growth always outstrips the available resources:

"Even if Malthus were absolutely right, this (socialist) transformation would have to be undertaken on the spot; for only this transformation, and the education of the masses which it alone provides, makes it possible to place that moral restraint of the propagative instinct which Malthus himself presents as the most effective and easiest remedy for over-population." Frederick Engels, *Outlines of a Critique of Political Economy*; Moscow, 1961; p. 203.

Conclusions:

The interaction between humans and nature was expressed by Marx and Engels in *The German Ideology*:

"We know only one science, the science of history. History can be viewed from two sides: it can be divided into the history of nature and that of man. The two sides, however, are not to be seen as independent entities. As long as man has existed, nature and man have affected each other."

Karl Marx and Frederick Engels, excerpt from The German Ideology, Selected Works, Volume 1: Moscow; 1969. p.17. [NB: This is a crossed-out passage in the manuscript]

It was bourgeois society that "universally appropriated nature":

"Capital creates the bourgeois society, and the universal appropriation of nature as well as of the social bond itself by the members of society..... For the first time, nature becomes purely an object for humankind, purely a matter of utility; ceases to be recognized as a power for itself; and the theoretical discovery of its autonomous laws appears merely as a ruse so as to subjugate it under human needs, whether as an object of consumption or as a means of production. In accord with this tendency, capital drives beyond national barriers.... It is destructive ... and constantly revolutionizes it, tearing down all the barriers which hem in the development of the forces of production, the expansion of needs, the all-sided development of production, and the exploitation and exchange of natural and mental forces."

Marx, Grundrisse; Penguin edition; London; 1973), pp. 409-410.

But Marx and Engels provided the bones of a future for us all, in the Communist Manifesto that in their words was "pretty generally applicable":

"Nevertheless, in most advanced countries, the following will be pretty generally applicable.

1 Abolition of property in land and application of all rents of land to public

purposes.

- 2 A heavy progressive or graduated income tax.
- 3 Abolition of all rights of inheritance.
- 4 Confiscation of the property of all emigrants and rebels.
- 5 Centralization of credit in the hands of the state, by means of a national bank with State capital and an exclusive monopoly.
- 6 Centralization of the means of communication and transport in the hands of the State.
- Factories and instruments of production owned by the State; the bringing into cultivation of waste-lands, and the improvement of the soil generally in accordance with a common plan.
- 8 Equal liability of all to work. Establishment of industrial armies, especially for agriculture.
- 9 Combination of agriculture with manufacturing industries; gradual abolition of all the distinction between town and country by a more equable distribution of the populace over the country.
- Free education for all children in public schools. Abolition of children's factory labour in its present form. Combination of education with industrial production, &c, &c". (*ibid*)

Marxist-Leninists should if they are not already, be in the growing environmental movements.

But - We need a Marxist-Leninist party free of revisionist trends to be able to translate these for today's conditions.