CLIMATE AND ENERGY POLICY: THE TIME IS NOW

Why Europe needs binding targets for 2030 – for greenhouse gas emissions reductions, renewable energy and energy savings

Friends of the Earth Europe

The EU is committed to reducing its greenhouse gas emissions by 80-95% by the middle of the century. Meeting that objective is essential to avoid dangerous levels of climate change, but it won't be easy. Political will amongst all EU member states, ambitious policies and the right technologies are needed.

That's why Friends of the Earth Europe is calling for three ambitious and binding targets for 2030 to cut greenhouse gas emissions, save energy and develop renewable energies.

These will encourage investment in solutions that will cut Europe's emissions at the rate and scale science tells us is needed, and also create decent jobs, improve energy security and save money for consumers and businesses alike.

Urgency

Tackling climate change is becoming more urgent with every passing day. The predicted consequences of not acting are becoming more tangible and the window for taking effective action around the world is closing fast.

Large areas of our world are already experiencing man-made climate change. It can be seen in the form of rising sea levels, melting glaciers, and increasingly severe floods and droughts. In Europe the impacts can already be observed in the form of heat waves, disappearing biodiversity and the need for new flood defences to protect low lying countries. They are contributing to increasing social inequality within and between countries.

Even the President of the World Bank has said, 'we need to be shocked into action'. His organisation has concluded that the world is on track to a '4 degree warmer world'[1], with 'devastating' consequences.

Scientists have produced new evidence linking recent examples of extreme weather – for example, droughts leading to crop failures and wildfires, or megastorms like Hurricane Sandy – to human activity[2]. In summer 2012, NASA announced that Arctic sea ice levels had reached a record low[3]. Greenland's ice sheet is losing mass at about 300 cubic kilometres per year, with potentially devastating consequences for sea level rises.

Europe and other industrialised countries are responsible for the climate crisis – historically, legally and morally – and they have the obligation to act first and fastest to combat it. Waiting for circumstances to change, or for others to take the lead, are simply not responsible or viable options.

1 World Bank (2012), *Turn down the Heat, Why a 4 degree warmer word must be avoided* http://climatechange.worldbank.org/sites/default/files/Turn_Down_the_heat_Why_a_4_degree_centrigrade_warmer_world_must_be_avoided.pdf

2 The Guardian, quoting the National Oceanic and Atmospheric Administration in the US, and the Met Office in the UK: http://www.guardian.co.uk/environment/2012/jul/10/extreme-weather-manmade-climate-change

3 National Aeronautics and Space Administration, http://www.nasa.gov/topics/earth/features/2012-seaicemin.html

Scale of the challenge

Already in 2007, the Intergovernmental Panel on Climate Change (IPCC) recommended that, to minimise the risk of 'dangerous' climatic change, developed countries need to reduce their greenhouse gas emissions by 25–40% by 2020[4]. Based on the latest science, the IPCC is this year expected to make an unequivocal case for even faster, steeper emissions reductions, in order to stand any chance of keeping global warming below 2°c.

The EU's current greenhouse gas reduction target is dangerously inadequate at only -20% by 2020. And the European Commission does not plan to reach 40% emission cuts before 2030[5]. This would be too little, too late. Research conducted in 2009 by the Stockholm Environment Institute for Friends of the Earth Europe suggested the EU should be aiming at a minimum of 60% domestic emissions reduction below 1990 emissions levels[6]. However, this was based on the premise of increased emission cuts which have not taken place. More recent research suggests over 80% cuts by 2030 are needed[7].

Achieving the level of emissions reduction needed to avoid the worst consequences of climate change means we have to start making the right choices about our future energy system now. Investments and decisions Europe makes today will determine the success or failure of action to address climate change: we must not lock ourselves in to false solutions.

Getting it to add up

Reduced energy consumption (by renovating buildings, for example, and by increasing transport and industrial efficiency) is a precondition for meeting the EU's mid– to long–term emission reduction objectives, according to the European Commission's *Roadmap for moving to a competitive low-carbon economy in 2050*[8]. Similarly, all decarbonisation scenarios in the Commission's *Energy Roadmap 2050* rely on a very significant increase in the share of renewable energies[9]. Backing energy savings and renewable energies will also bring us enormous benefits in terms of quality of life, job creation, energy security and economic stability.

This is why, as well as setting a greenhouse gas emission reduction target for 2030 in line with science and equity, the EU must also support ambitious targets for energy savings and renewables. Explicitly requiring emissions cuts to be made through energy savings and the development of renewable energies will help ensure that reductions are achieved in Europe rather than elsewhere. This is important because the Emissions Trading System (ETS) and the EU's 'Effort Sharing' policy, which covers non-ETS sector emissions, allow up to 50%[10] and 100%[11] respectively of required emission cuts to be met outside the EU through the international Clean Development Mechanism. The effectiveness of these 'offset' reductions is highly questionable: it is, for example, possible to credit investment in Chinese coal plants as emission 'cuts'[12]. In addition, carbon offsetting is causing significant social and ecological problems across the world[13].

Strong 2030 legislation for energy savings and renewable energies will also help counter the failures of the ETS. The EU cannot rely on a market-based approach: volatile and unpredictable carbon prices will not ensure a transition to a safe, sustainable and affordable energy system[14].

Targets for energy savings and renewables must be legally binding. Experience shows that, when it comes to climate and energy policy, change doesn't happen without binding targets[15].

4 Intergovernmental Panel on Climate Change (2007), page 776, http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-chapter13.pdf

5 European Commission (2011), *Roadmap for moving to a low-carbon economy in 2050*, page 14. http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0112:FIN:EN:PDF

6 Stockholm Environment Institute (2009), *Europe's Share of the Climate Challenge*. http://www.sei-international.org/mediamanager/documents/Publications/Climate-mitigation-adaptation/europes_share_heaps_09.pdf.pdf

7 Based on a maximum global carbon budget of 1,100 GtCO2e. Friends of the Earth (England, Wales and Northern Ireland)(2011), *Reckless Gamblers,* based on Table 4, page 19. http://www.foe.co.uk/resource/reports/reckless_gamblers.pdf

8 European Commission (2011), *Roadmap for moving to a low-carbon economy in 2050,* page 5, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52011DC0112:EN:NOT

9 European Commission (2011), *Energy roadmap 2050*, page 8, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52011DC0885:EN:NOT

10 See the European Commission's F.A.Q. section on the ETS, question 20: http://ec.europa.eu/clima/policies/ets/faq_en.htm

11 Estimate based on European Commission data on emission reduction requirements under the Effort Sharing Decision (http://ec.europa.eu/clima/policies/effort/framework/docs/draft_decision_aeas_esd_en.pdf), authorised levels of offsetting in the Effort Sharing Decision (question 5, http://ec.europa.eu/clima/policies/effort/faq_en.htm) and 2005 greenhouse gas emissions data provided by the European Environmental Agency (http://www.eea.europa.eu/publications/ghg-trends-and-projections-2012)

12 Following a decision by the CDM executive board – see meeting report under 81(g): http://cdm.unfccc.int/filestorage/r/8/K3OB5VGAQ1J4RUoPMTC8WISNL2XYFE.pdf/eb69_report.pdf?t=V298bWRxcW45fDCf142XktPiL6SAPWsuhDEz

13 Friends of the Earth (2009), *Dangerous Distractions*: http://www.foe.co.uk/resource/briefing_notes/dangerous_distraction.pdf

14 Complementary policies to the ETS are needed. See for the example the IEA report *Summing up the parts*: http://goo.gl/t8HHn

15 The European Council agreed on a voluntary 20% by 2020 energy savings target. In March 2011, the European Commission estimated the EU was 'on course to achieve only half of the 20% objective': *Energy Efficiency Plan*, page 2, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52011DC0109:EN:HTML:NOT

False solutions

If we don't give guidance on how emission cuts will be made – by putting in place a coherent set of three targets – the door will be left open for false solutions like nuclear power, the replacement of coal with natural gas and unsustainable bioenergy, or carbon capture and storage. These technologies will not deliver sufficient long-term emissions cuts.

Nuclear is too dangerous and unpopular, as Fukushima shows us. It is also prohibitively expensive. There are two large-scale nuclear projects underway in the EU: Olkiluoto in Finland and Flamanville in France. Both are five years behind schedule and two or three billion Euros over budget[16]. And there is no safe, long-term solution for the storage of radioactive waste. Nuclear cannot deliver safely, or within the required time period.

Energy companies are currently pursuing several bioenergy sources with a worse carbon footprint than fossil fuels[17]. These also represent a false solution and accelerate instead of mitigate climate change. Burning whole trees for electricity in coal installations is extremely inefficient and makes no environmental sense. And burning crop based biofuels for energy contributes to significant greenhouse gas emissions due to the destruction of natural carbon sinks as a result of agricultural expansion. It also fuels conflicts over land use. New targets for 2030 must exclude such unsustainable forms of bioenergy.

On its own, a greenhouse gas reduction target for 2030 risks encouraging the replacement of coal power plants with natural gas. Natural gas is less dirty than coal but it still locks Europe into an unsustainable, carbon intensive fossil fuel system.

Unconventional gas sources – such as shale gas – are also not a solution. The lifecycle greenhouse gas emissions from burning and extracting shale gas make it even more damaging than coal[18]. The International Energy Agency estimates the development of shale gas would drive climate change 'well above the widely accepted 2°C target'[19]. On top of this, unconventional gas is linked to air and water pollution, and significant health threats. Development of shale gas requires significant investment, which has already reduced available capital for renewables projects in the US[20].

Carbon capture and storage (CCS) is not a viable alternative. CCS is a 20th century concept, designed for cheap and plentiful fossil fuels. And because extra energy is needed to capture, transport and store CO_2, CCS increases reliance on fossil fuels. It is a hot topic for big energy companies because it represents the hope that they can keep alive the current energy model. Rather than being a solution, it risks perpetuating the problem. The fundamental fact is that we have to make the transition to an energy system which does not rely on fossil fuels.

16 *The Independent*, 22/10/2012. http://www.independent.co.uk/news/uk/politics/government-to-rip-up-rulebook-and-subsidise-new-nuclear-plants-8219870.html

17 Haberl H. et al. (2012) "Correcting a fundamental error in greenhouse gas accounting related to bioenergy", *Energy Policy*, 45, Pages 18–23. http://www.sciencedirect.com/science/article/pii/S0301421512001681

18 See for example http://www.eeb.cornell.edu/howarth/Howarth%20et%20al.%20--%20National%20Climate%20Assessment.pdf

19 IEA (2012), *Golden Rules for a Golden Age of Gas*, page 91. http://www.worldenergyoutlook.org/media/weowebsite/2012/goldenrules/WEO2012_GoldenRulesReport.pdf

20 Bloomberg New Energy Finance. http://about.bnef.com/bnef-news/clean-energy-investment-fell-11-as-governments-cut-subsidies/

Renewables: the only viable power source

Renewables – wind, solar, sustainable hydro and limited quantities of sustainable bioenergy – are the only inexhaustible, safe and technologically viable energy source. Already in 2010, renewables accounted for 21% of the EU's electricity production[21]. In the space of just one year, from 2009 to 2010, installed solar power capacity in the EU increased by 85% and wind power increased by 13%[22].

Friends of the Earth Europe supports a 100% renewable energy system for Europe for 2050. The feasibility of this scenario has been confirmed by studies by the German Aerospace Centre[23], providing significant reductions in energy use take place. It has also been confirmed – albeit for renewable electricity – by the European Commission[24]. Large-scale investment in renewables will push down electricity prices. This is because, unlike fossil fuels and nuclear, there is no 'fuel' component to the cost of wind, solar or hydro. The effects are already being noticed. In Germany, prices on the short term electricity market were found to be up to 40% cheaper in 2011 compared to 2007. This is attributed to increased production in solar electricity[25]. It is just as important to note that many renewables use today's technology – rather than relying solely on solutions which are always a few years away from success.

The EU cannot afford to be technologically neutral. It must increase security for investors and encourage the development of renewables by setting a binding target for 2030.

This is essential to prioritise renewable energies, but it is just as important to pick the right type of renewables. It is likely that the EU will meet over half of its 2020 renewables target with biomass and bioenergy[26]. But much of this may not actually contribute to emissions reductions, due to the current lack of carbon accounting. With growing concerns about the greenhouse gas balance of many types of biomass and bioenergy – as well as effects on biodiversity, land use, and competition with food production – the EU needs to get policies right by capping the contribution of bioenergy to renewables targets at sustainable levels, and promoting only bioenergy that is both sustainable and delivers real carbon benefits. Because of these concerns, Friends of the Earth Europe prioritises non-combustion resources (including wind, solar, sustainable hydro, wave and tidal power).

We believe it is crucial to include citizens in decisions about our energy future. Renewable energy projects should involve local people in their planning processes, offer them the opportunity to invest, and guarantee that the local community shares in the benefits. Involving communities has the potential to boost public acceptance of renewable energy, deliver up-front investment, provide a source of local funding, and contribute to community cohesion.

21 Eurostat, *EU energy in figures*, 2012

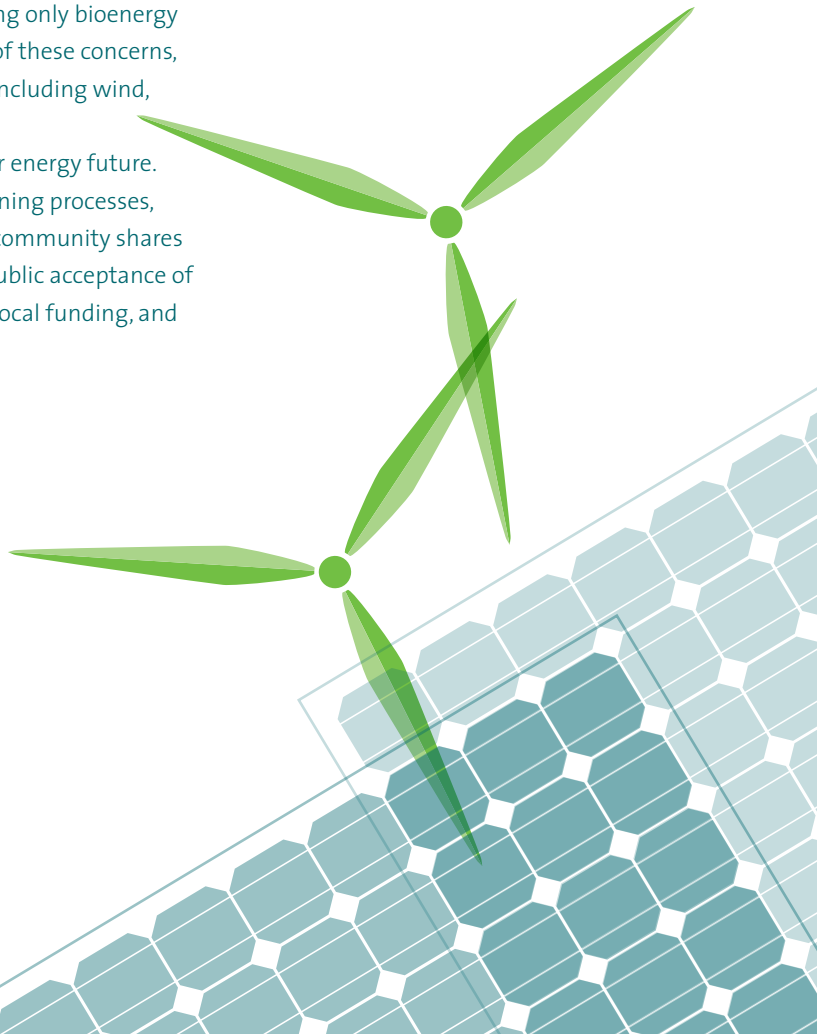
22 Ibid.

23 For Greenpeace and the European Renewable Energy Council. http://www.greenpeace.org/eu-unit/en/Publications/2012/ER-2012/

24 European Commission (2011), *Energy Roadmap 2050*. The 'high renewables' scenario expects that 97% of the EU's electricity consumption would come from renewables in 2050. See page 4, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52011DC0885:EN:NOT

25 This refers to cheaper prices on the spot market. See Ecofys, page 9, http://www.ecofys.com/files/files/ecofys_can_foe_2012_saving_energy.pdf

26 European Environment Agency, *Renewable Energy Projections as Published in the National Renewable Energy Action Plans of the European Member States* http://www.ecn.nl/docs/library/report/2010/e10069_summary.pdf



The energy we don't use

Regardless of the energy mix, the EU needs to use less energy. European Commission analysis shows that Europe will not reduce emissions on the scale needed in the long term without reducing energy consumption and waste[27].

This is confirmed by the International Energy Agency (IEA), which estimates that half of the EU's emission cuts must be delivered through energy savings policies by 2035[28]. Currently, the Commission is envisaging a 17-21% reduction in energy use below 2005 levels by 2030[29]. This is aiming very low.

In a study for the German Environment Ministry, Fraunhofer ISI, a research group, estimates that by 2030 energy consumption could be reduced by 50% below current levels[30].

The impact of such large energy savings on emissions reductions would be dramatic. Fraunhofer ISI estimates that cost-effective energy saving investments could reduce emissions in the EU's transport, industry, tertiary and household sectors by about 52% by 2030[31]. This is the kind of action the EU needs to seriously address climate change.

A further consideration is that it is cheaper and easier for the EU to meet its renewables target – which is expressed as a percentage of final energy – when final energy consumption is reduced.

The EU cannot afford not to reduce energy use. But even though efficiency measures are cost-effective, they are not automatic, and resolve is needed to make sure Europe gets the policies it needs to bring all the benefits of energy savings. A binding target is the only way to ensure energy savings really happen. The EU made the mistake of not setting a binding target for energy savings for 2020 and the current voluntary target has proved wholly ineffective.

The need for targets to be binding

Without ambitious, binding targets there is no guarantee energy savings and developments in renewable energy will happen on the required scale, even if they make perfect economic sense.

For example, in order for a government to benefit from renovating large parts of its building stock to be more energy efficient, it would need to set out a very clear allocation of responsibility for different levels of government. This would need to include mobilising upfront financing, ensuring the engagement of building owners, having a workforce which is capable of carrying out work to the required level, and so on. And all these things must happen in the right sequence, in order for supply chains to establish themselves and for the programme to take off.

While entirely feasible, this is a fairly complex and challenging task. And unless the government has a particular commitment or obligation to deliver a certain amount of energy savings – such as a binding target – it is very likely that the savings will not happen.

The EU's indicative target for energy savings by 2020 has resulted in a distinct lack of attention by governments and the private sector alike – with the result that the objective will most probably be missed.

Building up a full programme of renewable energy investment is also far from straightforward. In recognition of this, governments have set themselves a legally binding target to produce 20% of their energy needs from renewable sources by 2020, and adopted an obligation to put in place comprehensive support schemes. Providing investment security and reducing risks can reduce financing costs by up to 50%[32].

27 Decarbonisation is conditional on reducing energy use, according to the European Commission: *Energy roadmap 2050*, page 10, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52011DC0885:EN:NOT

28 2012 presentation from International Energy Agency to the Coalition for Energy Savings. Available on request

29 European Commission (2011), *Energy roadmap 2050*, estimate based on graph page 9, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52011DC0885:EN:NOT

30 Fraunhofer ISI (2012), table page 206: *Concrete Paths of the European Union to the 2°c Scenario.*

31 Ibid. table page 209

32 Ecofys (2012), *Interaction between RES support schemes and the internal electricity market*. http://www.europarl.europa.eu/document/activities/cont/201211/20121109ATT55209/20121109ATT55209EN.pdf

There is a huge monetary value in consistent, ambitious targets and regulations which provide the certainty required for investment.

In Germany, the security provided by feed-in tariffs has convinced private citizens and cooperatives to finance over half of the installed renewable energy capacity[33]. Denmark, meanwhile, pioneered citizens' involvement in renewable energy (and now energy efficiency) projects by specifying that local neighbourhoods must be offered the chance to invest. This 'buy-in' has also dramatically increased public acceptance of renewable energy projects.

The existence and acceptance by governments of legally binding targets really does make a difference. With stakes so high, we cannot afford not to learn from the lessons of 2020 climate and energy policy when it comes to establishing the 2030 targets.

It makes economic sense too

Europe cannot afford not to save energy. Ecofys, a research group, estimates effective energy savings policies could lead to annual net savings of €250 billion per year by 2030[34]. This would directly benefit consumers and businesses.

Because wind, solar and water resources are free, there are no fuel costs to these renewables. This means that once up-front investment costs have been paid off, energy prices can be lowered well below present levels while still paying renewable energy producers a fair income. This is in contrast with fossil fuels: the UK Climate Change Committee has found that up to 90% of price rises since 2004 are due to rises in gas prices[35]. And fossil fuel prices are only getting higher and more volatile. In Australia, the cost of wind has fallen to below that of coal[36].

Cutting EU energy demand and switching to renewables will also be a boon for energy security, business opportunities and new jobs. The EU spends roughly €400 billion per year on oil and gas imports[37]. Putting this money towards measures to reduce energy consumption and develop renewables would not only eliminate import dependency, it would be a huge stimulus for European businesses and jobs. For example, the Commission estimates roughly 400,000 net new jobs will be created if the EU meets its 2020 energy savings target[38].

By supporting binding and ambitious 2030 targets for energy savings and renewable energies, alongside a greenhouse gas reduction target, Europe will be picking technological winners – not false solutions. It will be backing polices of proven economic and environmental effectiveness. This is the only way to ensure Europe fulfils its responsibilities for tackling climate change and does so effectively and with maximum benefit to the EU and its citizens.

33 Trend Research (2011) *Marktakteure Erneuerbare Energie Anlagen in der Stromerzeugung*. http://www.kni.de/media/pdf/Marktakteure_Erneuerbare_Energie_Anlagen_in_der_Stromerzeugung_2011.pdf.pdf

34 Ecofys estimate €200bn annual net savings by 2020, assuming the EU's 20% by 2020 energy savings target is met, and €250bn annual net savings by 2030, assuming a reduction in energy use of roughly 35% below 2005 levels. See page 4, http://www.ecofys.com/en/news/energy-efficiency-will-trigger-250-billion-yearly-net-savings-by-2030/

35 Price rises due to non-renewables/climate factors were 90% for consumers, 85% for industry and 66% for commercial impacts of meeting carbon budgets http://hmccc.s3.amazonaws.com/ENERGYbill12/1672_CCC_Energy-Bills_bookmarked.pdf

36 Bloomberg New Energy Finance. http://www.bloomberg.com/news/2013-02-06/australia-wind-energy-cheaper-than-coal-natural-gas-bnef-says.html

37 International Energy Agency, quoted in the Financial Times, http://www.ft.com/intl/cms/s/0/ffoabf58-750d-11e1-a98b-00144feab49a.html#axzz2B5PHoscS

38 European Commission: http://ec.europa.eu/energy/efficiency/eed/doc/2011_directive/sec_2011_0779_impact_assessment.pdf

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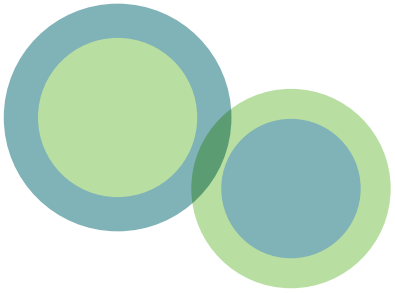

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Friends of the Earth Europe is calling for:

- **three ambitious, binding targets for 2030 to cut greenhouse gas emissions, save energy and develop renewable energies.**
- **the EU to give guidance on how emissions cuts need to happen, i.e. through ambitious energy savings and renewables policies.**
- **policies that favour the technological winners that are energy savings and renewables, not false solutions such as nuclear, shale gas, unsustainable biomass and carbon capture and storage.**
- **encouragement of investment in solutions that will cut Europe's emissions at the rate and scale science tells us is needed, and also create decent jobs, improve energy security and save money for consumers and businesses alike.**

This is the only way to ensure Europe fulfils its responsibilities for tackling climate change and does so effectively and with maximum benefit to the EU and its citizens.

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