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European Net Zero Alliance

100 measures for 100 days

Solutions and recommendations from the European Net Zero Alliance for the first 100 days of the new European Commission

December 2024

Members

24 associations advocating for cross-sectoral and cross-vectoral solutions towards climate neutrality.

About ENZA

The European Net Zero Alliance (ENZA), is a coalition of 24 European associations, representing a myriad of economic and industrial sectors – from manufacturing to energy infrastructure, building and construction, mobility, and agriculture – and different energy vectors – namely liquid and gaseous fuels, heat and cold, as well as electricity. The alliance was born from the commitment to deliver climate neutrality by 2050 based on a multienergy approach combining sectors and energy vectors for a cost-efficient, speedy decarbonisation.

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Introduction

This paper has been compiled through the collective input from ENZA members, each bringing insights shaped by their unique perspectives. The statements reflect the diversity of thought and expertise across the various sectors represented in ENZA.

100 solutions and recommendations have been compiled for the European Union, aimed at accelerating the transition to a net-zero future. This unique initiative underscores that there are no silver bullets for the energy transition to succeed - technology openness and a multi-technology approach are essential to achieving our climate goals.

ENZA members believe that only by embracing diverse solutions and perspectives can we achieve true resilience and ensure our shared climate and energy objectives are met. Offering timely targeted recommendations for action during the first 100 days of the new European Commission, this report bridges the gap between ambition and implementation, and provides EU leaders with actionable strategies to strengthen Europe's competitiveness, resilience and sustainability.

Solutions

Solutions

Energy Transition

1. Solar thermal as a versatile solution: Solar heat is a renewable energy source that can hybridise with any other technology for the supply of clean heat, representing a non-regret solution. It is an EU homegrown technology, based on non-critical raw materials, and considerably reduces harmful emissions and provides an affordable energy supply for buildings or industrial processes.

2. Local energy companies are driving the transition to more decentralised energy systems, with increasing amounts of locally produced renewable energy (both electricity and molecules). By leveraging local solutions, building on local heating and cooling plans, such systems can adapt more easily to fluctuations in demand and reduce exposure to single points of failure, offering feasible and cost-efficient energy solutions tailored to consumer needs.

3. Decarbonising heating systems: The success of the European Green Deal for buildings depends on the speed at which heating systems can be replaced with efficient ones. To speed up this transition, it is key to incentivize consumer demand for modern, efficient and renewable-based heating appliances.

4. Advances biomass conversion: The bioenergy industry offers advanced technologies for biomass conversion into heat/electricity/transport fuels, allowing for example to find value added for low quality biomass into sectors that are challenging to decarbonise (industries, transport).

5. Negative emissions: Waste-to-Energy (incineration of residual non-recyclable waste with energy recovery), bioenergy, and the pulp and paper industry can offer negative emissions through CCUS (carbon capture, utilisation and storage).

6. The European turbomachinery industry provides the solution for the whole CO2 value chain: Compressors are essential for Carbon Capture, Utilisation and Storage (CCUS) technologies. They compress the captured CO2, ensure the transport over pipelines, and support the injection in case of underground storage. Similarly, compressors are needed to transport Hydrogen via pipelines.

7. Green and low-carbon ammonia can be used as a fuel for the maritime sector and as an alternative energy carrier to facilitate the future hydrogen market.

8. EU ethanol biorefineries reduce CO emissions in transport. Bioethanol is a sustainable fuel alternative that reduces GHG emissions from petrol and hybrid cars and is the most available and affordable alternative to fossil fuels. Since internal combustion cars will remain in the majority on EU roads in 2030-2040, bioethanol helps the EU meet its climate objectives in a socially inclusive manner.

9. Renewable and low carbon fuels, such as low carbon hydrogen and its derivatives (e.g. low carbon methanol, methane or ammonia) have multiple benefits and are likely to be a major source of hydrogen(-derivatives) for the EU in the transition toward net zero.

Solutions

10. Enabling CCS technologies will help deliver negative emissions when combined with biomass fuels.

11. Green and low-carbon fertilisers can help decarbonise the food value chain.

12. The EU beet sugar industry can decarbonise by 2050 via a combination of energy efficiency, electrification and biomass-based strategies.

13. Scaling up bio-CCUS technologies: Technologies for bio-CCUS (bioenergy with carbon capture, utilisation and storage) are ready for scale up in the short term already, allowing the replacement of fossil-based CO2 for many applications including e-Fuels, and long-term indispensable carbon storage to balance unavoidable emissions.

14. SMEs driving the green transition: SMEs and crafts are key enablers of a green transition, improving the energy performance of buildings, mounting solar panels, installing heat pumps, pioneering climate-resilience solutions, and smartly repairing sustainable products.

15. District Heating and Cooling (DHC) networks enable harnessing renewable and recovered local heat and cold sources, such as sustainable bioenergy, geothermal, and solar thermal, and recovered waste heat from industrial and tertiary sectors at scale, to decarbonise buildings and industries. Efficient DHC networks will be supplied by 100% renewable and waste heat sources by 2050.

16. The pulp and paper sector can voluntarily provide demand-side flexibility based on hybrid technology systems, including CHP and e-boilers, contributing to grid stability, and benefiting all consumers.

Competitiveness

17. Economic role of SMEs: 25.8 million small and medium enterprises (93 % of which are micro-enterprises) are drivers of an economically sustainable, fair and just transition, securing and creating quality employment, and providing goods and services close to the people.

18. Local growth with district heating: The EU's district heating and cooling sector is a locally managed, homegrown solution that supports local jobs, reduces dependency on costly fossil fuel imports, and harnesses recovered and renewable heat sources. By expanding district heating and cooling (DHC) networks, Europe can enhance energy efficiency and green growth resilience.

19. SMEs in construction and renovation: Construction SMEs and craftsmen are the local actors that make the renovation wave a reality, from changing windows, to repairing roofs, installing PV panels or maintain HVAC systems, to deep-renovate buildings or erect from scratch new houses.

Solutions

20. EU leadership in solar heat technology: EU made solar heat technology leads the supply in Europe. This EU clean tech sector, comprising hundreds of SMEs creating thousands of local jobs, currently meets 90% of the domestic (EU) demand and exports high quality products worldwide, demonstrating that EU made solutions can be competitive.

21. Beet sugar industry and food security: The EU beet sugar sector contributes to the EU's food security, consistently producing more sugar than the EU consumes. This provides secondary food processors and European shoppers with a reliable, sustainable and local supply of sugar.

22. EU ethanol biorefineries support European farmers and boost food security. EU biorefineries convert multi-purpose crops and agricultural waste from European farmers into renewable fuel, high-quality animal feed and food and other valuable by-products.

23. Resilient construction sector: Constituted by 95% of micro companies, the construction sector represents 10% of the EU GDP. These companies are providing local jobs to low, medium and high-skilled talent to meet the ambition of renovating the existing building stock and infrastructure by 2050, also acting as boosters of local economies.

24. Hydrogen's industrial impact: Renewable and low carbon gases have the potential to drive significant global industrial development while safeguarding jobs in Europe that might otherwise be at risk.

25. Competitive European heating industry: The European heating industry leads the way in developing and introducing innovations needed for the decarbonisation of buildings. In the past years European heating companies have invested massively in R&D as well as in increased manufacturing capacity to bring to the market renewable-based, efficient heating solutions adapted to the EU's buildings and climate heterogeneity.

26. The EU forestry sector, the wood, fibre-based paper, and board products industry represents 20% of EU manufacturing companies generating €520 billion turnover (3% of EU GDP).

Circular Economy

27. Biomass, biogas and biomethane from waste and residues:
Biomass, biogas and biomethane are generated from different types of organic residues, turning waste into a valuable resource. Additionally, their production provides two valuable co-products: digestate to be used as organic fertiliser and bioCO2 that can replace the use of fossil CO2 in many industries. The continuous re-use of resources is a core principle of a circular economy system.

28. Circular solutions from the pulp and paper industry: The paper industry sector is a key player in sustainability, offering renewable and recyclable circular products that store bio-based carbon, substitute fossil-based materials and contribute significantly to Europe's green energy transition.

29. Waste-to-Energy in circular systems: Waste-to-Energy (WtE) technology can support decarbonisation & the circular economy. WtE lowers landfill methane emissions and recovers valuable materials (metals and secondary aggregates), supporting short and medium-term climate goals and advancing the circular economy.

Solutions

30. High circularity of solar thermal panels: Solar thermal panels have a high circularity potential, allowing for over 90% recyclability of the materials used in solar collectors (copper, glass, stainless steel, aluminium). Additionally, it does not rely on rare-earth minerals or other supplies from geopolitically sensitive regions.

31. Construction SMEs leading circular practices: Small construction SMEs are at the forefront of handling construction and demolition waste. These small companies will be pivotal at raising awareness, training, the construction workforce on sorting, reusing or recycling, and turning circularity into concrete tasks.

32. District heating enhances recourse efficiency: District heating and cooling is the only solution capable of harvesting heat - that would otherwise be dissipated into the air - at scale, to supply households. By reusing heat from data centres, wastewater treatment plants, other tertiary services and broad range of industrial processes the district heating and cooling sector ensures high level of resource efficiency, and provide flexibility to the energy system.

Affordability

33. Solar thermal is an affordable renewable heat source, demonstrated by excellent levelised costs of energy. After a one-off capital investment, it provides free energy for over 25 years and is not subject to price fluctuations or energy price inflation.

34. Cogeneration enables industry, district heating and buildings to make the energy efficient and cost-competitive switch to carbon neutrality by 2050, improving energy security and reducing energy system costs by more than 5 bn per year.

35. District heating and cooling is the only large-scale solution enabling the integration of sustainable heat sources, significantly reducing reliance on volatile fossil fuel imports, stabilising energy prices, and offering a more resilient energy infrastructure – e.g. via flexible cogeneration. By scaling these systems, the EU can boost energy self-sufficiency while cutting emissions, ensuring a more sustainable, affordable energy supply for citizens and businesses.

36. Renewable and low carbon gases are crucial to ensure a sufficient and affordable supply for the EU, its citizens and its industry, as they lower transition costs and keep energy prices for consumers and industries manageable.

37. Biogases are one of the most competitive renewable gases on the market to swiftly decarbonise our economy and break the EU's dependency on natural gas imports, leveraging the already existing extensive gas network in Europe.

38. Prioritising cogeneration for the efficient use of all thermal energy sources will reduce energy waste, thus accelerating the cost-effective uptake of thermal renewable and low carbon energy, such as biomass, biogas, biomethane, solar thermal, waste heat and renewable hydrogen.

Solutions

39. Energy security and affordability increasingly rely on local renewable heat sources. Scaling district heating and cooling with these sources can make energy bills more stable and affordable for households and businesses.

40. Hybrid systems optimally combine clean energy solutions, such as cogeneration, heat pumps, energy storage and renewables. Taking advantage of a diverse mix of energy sources boosts resilience and lowers energy costs both for consumers and for the energy system as a whole.

Security of Supply

41. Integrated energy system approach: Integrated local energy companies can enhance security of supply and climate resilience by interlinking and combining different energy systems such as electricity, gases and district heating, as well as other sectors (transport, buildings, waste and wastewater). This enables different energy vectors to support each other, improves integration of renewable energy, and optimises the use of existent and new energy distribution infrastructures.

42. Strengthening the grid with biogas: Ensuring the full rollout of biogases will be critical to boost the rise of other renewables and the flexibility of the energy system while strengthening the role of Europe as a global leader on clean tech manufacturing.

43. Waste-to-Energy technology (incineration of residual nonrecyclable waste with energy recovery) offers a local, secure, clean and reliable source of energy supply. It provides a constant energy source, stabilising the grid and complementing renewables, reducing reliance on imported fossil fuels, and enhancing energy security.

44. Combination of the two: Waste-to-Energy (incineration of residual non-recyclable waste with energy recovery) offers a local, secure, clean, and reliable source of energy for electricity and heat grids. It provides a constant energy supply, stabilizing the grid, complementing renewables, reducing reliance on imported fossil fuels, and enhancing energy security.

45. Hydrogen effectively stores variable renewable electricity, enhancing grid stability and flexibility as reliance on renewable energy grows. Hydrogen power plants will allow to re-use locally produced and stored hydrogen in times of low generation and high demand.

46. Biogas provides an essential on-site energy source: Cogeneration plants running on biogas allow farmers, wastewater treatment facilities and others to use their own biogas on-site to produce electricity and heat in a totally independent way - allowing plants and businesses to continue running even in the extreme event of a grid failure.

47. Turbine-based cogeneration supplies both heat and electricity to industries and households. Cogeneration is running efficiently by recovering and reusing the waste heat. It can be combined with power to heat solutions and heat storage to run in synergy for lower costs and increased security of supply.

48. Flexible, dispatchable power with renewable gases: engine power plants help stabilise the grid and complement renewables. Installed in microgrids together with renewable generation and storage, they provide reliable decarbonisation solutions for a wide range of service sectors and industry.

Solutions

49. Renewable and waste heat sources, coming from industries such as the pulp and paper sector, supplying district heating networks are local and stable, while district heating and cooling (DHC) networks can use excess electricity from the grid via large scale heat pumps and eboilers. Connected to a thermal energy storage, DHC is not only an efficient stable supply of heat, but also an effective tool to provide flexibility and balancing services to the electricity grid.

50. The pulp and paper industry is one of the largest industrial prosumers in Europe, with the potential to produce another 31 TWh of fossil-free electricity and heat on-site.

Recommendations

Recommendations

As the new European Commission takes office, the first 100 days present a unique opportunity to set a clear and ambitious direction for Europe's sustainable future.

Our proposals foster synergies across sectors and technologies and are crafted to feed into the Commission's broader political priorities, particularly in advancing the green transition, enhancing energy security, supporting the upcoming Industrial Decarbonisation Accelerator Act and ensuring the affordability and competitiveness of Europe's energy transition.

As such, the measures outlined in this document have the potential to inform and shape key policy initiatives aimed at addressing these critical objectives.

ENZA is eager to collaborate with the new European Commission and the European Parliament to turn this shared vision of a climate-neutral and competitive Europe into reality.

Recommendations

Energy Transition

51. EU policies and programs must encompass and consider all local innovations that support the decarbonisation goal, from hybrid heating solutions to hydrogen engines.

52. The EU should concentrate its efforts to urgently deploy a robust certification system for all renewable and low carbon gases and their derivatives.

53. The EU approach to emissions-reduction should be open to all technologies. A pragmatic approach could make the best use of existing technologies that reduce emissions now, work in existing infrastructure, and preserve citizens' purchasing power and freedom of mobility. When the EU revisits this policy in 2026, it should measure all technologies by their actual life-cycle emissions and create more flexibility to include solutions that work.

54. Europe must significantly scale up flexible energy resources, including dispatchable technologies, to meet the rising demand for electricity driven by variable renewable energy sources such as wind and solar. Flexibility needs are expected to increase fivefold by 2050. Investment in energy storage, smart grids, and dispatchable generation is crucial to ensure reliable electricity supply.

55. To scale up CCUS technologies, the EU's agenda should establish a clear regulatory framework, prioritise market growth and infrastructure development, while supporting all capturing opportunities (CCS, CCU and carbon removals.

56. The neighbourhood and district approach should take a central role in the renovation of buildings, ensuring resource and cost-efficient development of heating solutions resulting in more affordable and sustainable housing.

57. To accelerate decarbonisation, a technology-neutral approach should be adopted and the multiple environmental benefits of renewable and low carbon fuels should be recognised.

58. Encourage investment in the development of infrastructure and the improvement of power and heat networks' capacity to cost-efficiently integrate a diversity of fossil-free energy sources within industrial sectors.

59. The ambition of REPowerEU must be anchored into legislation to ensure all Member States, the whole value chain, as well as consumers, commit to and support the rolling out 10 million and 30 million additional hydronic heat pumps by 2027 and 2030, respectively.

Competitiveness

60. Further erosion of carbon leakage protection measures must be prevented. In this context, decarbonisation pathways relying on biomass should not be penalised under the EU ETS.

61. The EU needs an export solution, which is not currently covered under the Carbon Border Adjustment Mechanism, for European products that face unfair competition when exported to countries without an equivalent carbon price.

Recommendations

62. The EU should require the same standards of sustainability and quality for imported heating products as for EU-made products, for example by putting a price on the emissions embedded in finished goods and components coming into the EU, comparable to the carbon levy under the Emissions Trading System and the Carbon Border Adjustment Mechanism.

63. On-site permitting needs to be accelerated and decentralised renewable and efficient energy generation needs to be prioritised to ensure the secure and affordable supply of heat and power to industry.

64. EU strategies to support efficient solution to lower the energy costs, e.g. cogeneration with costs savings of 10-20%, which can boost EU industrial competitiveness.

65. The EU should introduce technology neutral targets promoting all renewable and low carbon gases allowing GHG emissions reductions to support an increased demand.

Circular Economy

66. Waste-to-Energy should be recognised as a sustainable, affordable and secure source of energy and secondary materials.

67. The Circular Economy Act must incentivise circular business models through supporting the EU-wide development of circularity hubs for SMEs and providing easily accessible funding through circularity vouchers.

68. Stronger enforcement mechanisms are needed to ensure that the waste hierarchy is respected, prioritising waste prevention, recycling, and energy recovery over landfilling. This will safeguard the role of Waste-to-Energy in managing non-recyclable waste, supporting both energy transition and circular economy goals.

69. Possibilities and markets to trade carbon removals should be established.

70. Secure fair competition on global markets for renewable EU products and ensure compliance with global trade rules and EU regulations for the import of goods to the internal market.

Investments & Financing

71. The European Commission should establish EU-level de-risking instruments to facilitate the expansion of sustainable heat sources, such as geothermal and industrial heat recovery, and support the modernisation of district heating and cooling (DHC) networks. This would foster a more flexible, resilient energy system and enhance industrial competitiveness.

72. To increase the uptake of collective energy actions and energy sharing among SMEs, the Citizens Energy Package must be extended to cover also SMEs. The energy sharing aspect of the Electricity Market Directive must be implemented in a way that empowers citizens and SMEs.

Recommendations

73. Financial instruments should be put in place to support the deployment of solar heat for households, professional and industrial users. For industrial clients, this means mainly putting in place derisking instruments, to reduce financing costs and decision time. For buildings, it means setting up instruments providing access to financing at very low interest rates, facilitating an increase of consumer investment in the energy transition.

74. The EU must readjust the Just Transition Fund in terms of funding and scope with a special focus on empowering SMEs facing serious socio-economic transition challenges.

75. Unlock financing instruments for de-risking the industry's investments in new installations or substantial refurbishments aimed at improving energy efficiency, CO2 avoidance and switching to fossil-free energy.

76. Guide Member States on how to effectively open up and promote access to financial instruments (for example, credit guarantee schemes) to companies, especially SMEs, thus stimulating further investments in renewable energy generation and thereby access to renewable electricity.

77. Appropriate investment and financing frameworks must be in place to help local energy companies face the significant investment costs required. Resilience considerations should be encompassed when the concept of 'anticipatory investments' is specified in legislation or regulation.

78. Dispatchable thermal turbine-based generation can provide essential grid stability, especially during periods of low renewable energy output, and support Europe's decarbonisation efforts. Policies should support the integration of these dispatchable technologies into the energy mix, ensuring they remain a viable option for future energy demands.

79. The development of efficient district heating and cooling (DHC) networks should be further supported by facilitating access to finance for operators, cities and utilities, which should cover the entire project scope. Beneficial energy taxation for the purchase, connection and installation of sustainable heating and cooling systems should ease the households' transition to clean heat solutions.

80. Policy support for carbon capture: Increased policy and financial backing for integrating carbon capture can position sectors such as Waste-to-Energy (WtE), bioenergy, and pulp and paper, as a net-negative emissions solution.

Affordability

81. Ensure a cost-efficient decarbonisation through a systemic approach to Europe's energy supply, including all energy vectors and technologies that can contribute to reaching the targets.

82. All RED-compliant renewable ethanol should be included in the definition of CO2-neutral fuels, providing alternatives needed alongside electrification to reach ambitious EU targets.

83. A clean, well-integrated, and resilient energy market will help ensure affordable energy prices for SMEs. Fossil fuel subsidies should be responsibly phased out to free up public finance for supporting the green transition of SMEs.

Recommendations

84. Lower operating costs of new, more efficient, flexible appliances (e.g. heat pumps), by making consumers benefit from cheaper renewable electricity. To incentivise such investment in a more costly but more efficient and flexible appliance, consumers should be able to benefit from lower energy bills. This can be achieved by utilities offering dynamic pricing / flexible heat pump tariffs to consumers – which for instance would shift consumption outside peak hours when electricity is likely to be cheaper – and by reducing the taxes and fees paid by private households for renewable electricity.

85. Due to a stagnating demand for new appliances caused by high costs, stable and long-term national financial support, such as government incentive schemes and loans or guarantees, is needed to incentivise consumers to invest in a new heating system.

Security of Supply

86. The interrelated effects of climate change on renewable generation assets, energy networks and consumption patterns should be taken into account requiring in turn the increasing integration of energy systems. In order to do so, considerations on system and climate resilience must be integrated in bottom-up approaches for energy infrastructure planning. This comprehensive approach will provide the right conditions for local energy companies to enhance the resilience of their energy systems.

87. Electricity markets should be made future-proof with specific schemes that reward reliability in a broad sense. Reliable and flexible power will be needed to stabilise the grid and cover demand for both residential districts and businesses, especially in times of low wind and solar output.

88. Guidance is needed for regional and local planning of new production capacities, leveraging existing legislative requirements (i.e., Energy Governance Regulation, RES Acceleration Areas, national grid development plans) and gas networks.

89. Promotion of sector coupling is needed (e.g. through thermal energy storage, when feasible), as well as the decentralisation of efficient generation and solutions that avoid network losses, support power system adequacy, and reduce the need for costly grid reinforcements.

90. The availability of renewable, home-grown energy varies from one region to another. Europe should tap into its renewable gas potential by promoting the use of renewable gases where available.

91. Europe is facing a significant decline in flexible generation capacity due to the decommissioning of older gas turbines. Measures should be put in place to extend the lifespan of these assets or to replace them with modern, low-carbon alternatives. This will reduce adequacy risks, ensuring a stable electricity supply while meeting carbon reduction targets.

92. The European Commission's upcoming Electrification Strategy must recognise the role of flexible energy systems in balancing the grid by supporting the development of integrated energy solutions, including heat storage systems, high-efficiency combined heat and power (CHP), and power-to-heat (P2H) technologies.

Recommendations

Simplification

93. EU rules on renewable gas production should be streamlined to reduce the administrative burden and support new project developments, while maintaining high level of sustainability.

94. The EU must ensure that the voluntary standard for SMEs (VSME) to report under the Corporate Sustainability Reporting Directive (CSRD) is accepted as standard for non-reporting SMEs by large enterprises and banks requesting information.

95. In order to minimise the administrative burden and simplify the regulatory framework placing environmental and sustainability requirements over European manufacturers and businesses, policymakers should evaluate product by product the cost-effectiveness in terms of environmental impact and administrative burden of proposed sustainability requirements.

96. The European Commission should promptly establish a definition for low-carbon hydrogen and review the RFNBO definition to make it more pragmatic.

97. EU legislation should not pick market winners and losers but set RES/GHG objectives and let market actors find their best ways to reach these objectives depending on their available resources (skills, feedstocks, technologies, etc.).

98. An integrated systems' approach to decarbonisation is important, supporting the move towards hybrid solutions and taking advantage of increased energy efficiency and renewable solutions across electricity, heat and gas systems.

99. The European Commission should quickly update the hydrogen strategy to ensure alignment with the National Energy & Climate Plans (NECPs) and account the role of hydrogen imports.

100. European energy and environmental policies must clearly recognize the critical role of flexible turbines in providing dispatchable capacity to support the grid. This includes ensuring that low-carbon and carbon-free fuels are integrated into fuel supply projections and that these technologies are incentivised through long-term market signals and supportive regulations.

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