

Roche's Position on Energy¹

Background

The preservation and evolution of modern life is dependent on a steady, reliable, safe, secure, affordable and sustainable supply of energy. Today, providing sufficient amounts of primary energy to meet the daily demand without adverse impacts on humans, the environment, wealth and the economy is challenging. There are a number of issues and risks related to the supply and use of energy. In fact, energy-related issues affect 7 of the 17 UN Sustainable Development Goals (SDGs), which Roche supports, namely goals 6, 7, 9, 11, 12, 13, and 15. All energy resources have limitations that prevent their unconstrained utilization, be it finite fossil fuel and uranium resources, the competing use of arable land for energy crops, the limited number of suitable sites for solar, geo-thermal or hydro power facilities, imbalance between supply and demand for sustainable energy, lack of large-scale energy storage, as well as monetary constraints. Coupled with ever increasing world consumption – due to rising population and increasing living standards – energy shortages and rising energy prices are inevitable unless we step up conservation efforts. The marked geographical and geopolitical imbalance between the world's net energy consumers and its net energy suppliers causes price fluctuations, supply interruptions and political tension as a result of unfavorable political and regulatory developments, unilateral economic measures and political instability or conflicts in various parts of the world. Energy is a powerful weapon for advancing political interests. Energy supply can be hampered by plant outages caused by events such as technical failure, water shortage, loss of cooling, natural disasters, malicious or terror acts. In addition, unsteady energy supply coupled with fluctuating energy demand can produce grid instability.

From an environmental perspective, all energy activities (e.g. exploration, extraction, transportation, conversion and use) have either direct or indirect adverse impacts. Prominent examples include the destruction of natural resources and habitats, the contamination of soil and water, (hazardous) waste landfilling and air pollution, depletion of water resources in water-scarce locations, damage of ecosystems and loss of biodiversity. Burning fossil fuels for energy generates harmful air pollutants such as carbon oxides, sulphur dioxide, nitrogen oxides and respirable dusts. Importantly among these, CO₂ emissions caused by human activities contribute to global warming and climate change. For more on this topic, see our position paper on climate change².

There is a strong linkage between water and energy. The extraction of primary energies, the production of biofuels and the generation of power consumes or utilizes water. The extraction, pumping, cleaning, purification and treating of water consume energy, in particular the energy

¹ Pertains to SDGs 6, 7, 9, 11, 12, 13, and 15

² For more on this topic, see our position paper on climate change:

https://www.roche.com/dam/jcr:906a5aef-1035-4cc2-a011-dcf0e5b9f481/en/global_position_greenhouse_gases__climate_change.pdf

intensive desalination of water. Water shortage impacts energy supply security, energy shortage impacts water supply security. These interdependencies are expected to intensify in the future. Incidents related to energy activities have potentially catastrophic and long-lasting effects on people, environment and business, such as the Deepwater Horizon oil incident or the Fukushima nuclear incident. Vast areas become devastated and contaminated, and local economies can be permanently altered. The financial consequences are enormous since contaminated land cannot be commercially used and remediation costs for such catastrophes are very high. To address safety, environmental and supply security issues associated with energy activities, more regulations get introduced. These, in turn, further limit exploration, extraction and processing and have direct negative effects on energy costs.

Stakeholders' Expectations and Concerns

The world depends upon reliable and secure energy supplies, and expects affordable, safe and sustainable energy to be available at all times. However, different stakeholders have unique if not opposing interests. The private sector expects affordable and reliable energy supplies. For industries energy costs and the stable supplies are essential for their business to be successful. Also, industries and in particular the energy sector expects regulatory frameworks that ensure planning stability, since capital for investments in energy infrastructure projects is a limited resource – especially as energy technologies are capital intensive, carry high regulatory risk, have a low return on investment, and a long payback period. Regulators define energy efficiency requirements, impose levies on emissions associated with energy activities, limit emission allowances and establish frameworks and targets for sustainable energies. Investors expect companies to use energy economically and to manage all risks associated with energy supply and energy use.

To mitigate all negative energy-related issues we are expected to move towards a low-carbon and sustainable energy future. All stakeholders need to partner to ensure the world is developing towards a sustainable energy future. Roche's role is to continually increase its energy efficiency and reducing the use of energy produced from non-sustainable sources.

Roche Position

Like any company, Roche requires energy to operate. We use energy primarily to heat and cool production processes, run machinery and equipment, maintain controlled air environments, provide comfort heating and cooling and for transportation and business travel. Maintaining awareness of all issues related to energy use, we are acting towards a sustainable energy future. Delaying actions is not preferred, as this is likely to necessitate more dramatic, more disruptive, more expensive changes in the future. We understand energy conservation to be the most effective way to holistically address the many multi-faceted energy issues. Hence, Roche's actions are prioritized towards conserving energy and increasing energy efficiency because this makes the biggest positive difference.

These energy conservation efforts result in higher resource productivity – producing more with less impact on natural resources –, reduce costs and increase operational eco-efficiency, yield a cleaner environment, address the climate change, reduce negative impacts on water resources, reduce dependencies and reduce risks associated with using energy. Roche’s focus on energy conservation is in agreement with studies (e.g. the McKinsey study on global GHG abatement³), which conclude that investing in energy conservation and efficiency measures are the most cost effective.

When circumstances permit, Roche invests in sustainable energy technologies such as solar and geothermal or purchases sustainable energy. However, Roche does not support substituting undue energy needs with sustainable energies. Substitution is only acceptable after all reasonable energy conservation measures be implemented and efficiencies increased.

Roche’s long-term vision is to reduce energy intensity by 50% and substituting the remaining energy as to use nothing but sustainable energies in the long-run. It is impossible to define a predefined path towards these long-term goals, given the unknown and uncertain changes as it regards the farer future of our business landscape, the product portfolio, new yet unknown emerging technologies, industry framework and future legislations. This is why Roche pursues these long-term goals with a staggered approach by continually setting mid-term targets. These targets are based on the current situation and the foreseeable and anticipated changes and hence they can be well planned, managed and monitored. Once a target period expires, new mid-term targets are set taking into account the future situation and circumstances. The current targets are published on the Roche webpage⁴.

Roche aims to accomplish all its targets at source, i.e. by improving our own operations. The compensation of undue energy consumption is not accepted as this would be a more costly option.

To promote our position on energy issues, we implemented an in-house Energy Conservation Directive (K18) in 2006. It seeks to ensure that all decision-making at Roche supports efficient, appropriate and cost-effective energy use. It establishes a management framework and defines fundamental conservation requirements. It incorporates all “energy consuming items” from motors through entire building, encompassing all processing plants and equipment. The K18 directive seeks to enforce a systematic approach to sustained improvement of energy performance by applying three core elements:

Energy Conservation Process (ECP): The ECP is structured to direct and control energy use within every business function just as methodically as any business expense. It follows a common management approach and can be customized to site specifications and business needs.

Energy Efficiency Design: The use of high energy efficiency design is the most cost effective manner to reduce energy consumption, i.e. doing it right first time rather than costly retrofits at a

³ McKinsey & Company, “Pathways to a low-carbon economy”

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http://www.roche.com/sustainability/what_we_do/for_communities_and_environment/environment/our_she_goals_and_performance.htm?tab_id=tab1

later stage. Implementing highly efficient technologies ensures that Roche continuously improves its high standards. The Directive stipulates energy efficiency standards and prescribes minimum energy performance levels. To foster investments in energy conservation, we use distinct “Full Cost Life Cycle Analyses”. Relevant design alternatives are evaluated and compared on the basis of net present values (NPV), which account not only for the immediate investment costs but also for the future operating (incl. energy) costs over the expected lifetime. To capture the true balance of costs and benefits of energy conservation and efficiency investments, NPVs are calculated over the entire life cycle with real energy cost escalation rates and reduced discount rates 2% points lower than current rates. The reason behind is that investments in energy conservation measures are of lower risk and also pursue our sustainable development.

Optimizing Existing Assets: To constantly achieve and maintain energy efficient systems, operating schedules and energy-consuming equipment need to be optimized. In-house experts or third party consultants inspect existing assets for savings opportunities with measures implemented if Life Cycle Costs are favorable.

Roche expects an increased shift towards low-carbon technologies and the transition to a sustainable yet stable and reliable energy infrastructure. The energy industry will need to provide reliable access to a well-balanced mix of technologies and geographically dispersed resources. This will require new and innovative technologies. In particular, solutions need to be developed to assure stable power grids and to store electricity to overcome the mismatch of unsteady sustainable energy generation and fluctuating energy demand. We believe that all promising options should be pursued, and technologies should be selected based on their human, environmental and economic impact. This necessitates appropriate frameworks to support research and development, to encourage businesses to innovate and develop new technologies and to promote the utilization of low-carbon and sustainable technologies.

Roche prefers voluntary action. Should regulations be introduced, Roche would welcome flexible frameworks that allow sufficient time and technical, organizational and procedural freedom for change and development. Given that energy projects are long-term investments, reasonable transition periods are vital to enable appropriate action to be taken in the course of normal capital replacement cycles.

Energy is an issue of global proportions that needs to be addressed by all of us, on both a local and global scale. All must participate to ensure the transition towards a sustainable energy future. We as Roche want the burden for action to be fair, and we expect regulations and sustainability rating schemes to acknowledge and take into account our prior achievements already accomplished in the past.

Roche continues to be committed to use of the earth's resources responsibly. Roche promotes greater environmental responsibility by supporting:

- The principles in UN Global Compact regarding climate;
- United Nations' Sustainable Development Goals
- The Paris Climate Accord approved at COP21 by supporting the long-term goal to limit the increase in global average temperatures well below 2°C and to pursue efforts to limit the increase to 1.5°C;
- Adoption of a global framework (based on COP21) to address CO₂e challenges under which all major emitting countries are committed to emission reduction goals.

Outlook/Status/Current engagement and initiatives

With our management system, our goals and in particular with our highly committed employees, Roche has developed a successful strategy to deliver great energy conservation results and maintain positive performance⁵. Energy conservation is an integral part of our daily business. Roche's energy conservation activities are well-perceived by the public and we frequently earn high scores in investor-backed sustainability rating programs. Roche has been ranked the most sustainable healthcare company in the Dow Jones Sustainability Index for many consecutive years. To support Roche's goals, sites are required to develop action plans which are closely monitored for implementation and effects. In addition, the exchange of best practices in energy savings and emission reductions is encouraged through a variety of communication channels.

Beyond the impacts of our own operations, Roche recognizes that there are a variety of indirect environmental impacts throughout our value chain. Roche has also established a Product Stewardship (PS) program that is designed to reduce the ecological footprint of our products, including resources consumed during product use (e.g. energy and water)⁶. Roche's Procurement continues to work with (key) suppliers to help them reduce their environmental footprint. Recent initiatives include a CO₂ reduction project with fifty-five suppliers in Latin America.

In our pursuit of sustainability, we make every effort to prevent adverse impacts on people, the environment or our business. This means systematically analyzing and evaluating risks associated with energy-related activities and taking appropriate measures to reduce potential risks to acceptable levels. Using the same evaluation scheme, energy supply chain risks that could affect business continuity are also evaluated, and if risks are deemed unacceptable, appropriate back-up solutions are implemented. To date, no significant risks to Roche's business have been identified. In addition, the diversification of manufacturing among different locations globally helps to reduce the potential impacts from a business interruption.

⁵ For more information on our progress towards goals see:

https://www.roche.com/dam/jcr:7c4adf2d-e424-4aaa-b169-1647a6884787/en/she_energy_consumption.pdf

⁶ For more detailed information on Roche's PS program see the PS intranet:

https://www.roche.com/dam/jcr:5afa4418-ead4-4b4a-b3e6-aa9fa1efea28/en/position_product_stewardship.pdf

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