The invisible power of energy efficiency

By Lars MEISINGER &
Peter SCHNELLHAMMER

With businesses and households feeling the effects of high energy prices, efficiency is more than ever the driver of the transition to net zero. Furthermore, Russia's invasion of Ukraine has triggered a paradigm shift in European security.

Power prices and volatility continue to test historic highs, putting companies, households, and even central banks under inflation pressure. To maintain the EU's competitiveness and regain energy sovereignty, an accelerated energy transition is essential. The reduction of primary energy consumption alongside the associated necessary imports of fossil fuels facilitates this process.

Expanding renewable energies to ensure an independent power supply and enable electrification are essential. But energy-efficient measures are also critical. While most efficiency measures have negative investment costs in the past, i.e. potential savings exceed upfront costs, the increase in electricity prices makes this even more the case. Looking at the inefficiencies of a fossil fuel supply illustrates this point.

Only about one third of primary energy is used due to heat losses from fossil power plants and unused savings potential among consumers. Since underlying commodity prices are rising, this system cannot be sustained much longer. Moreover, reducing energy imports from Russia, with all of the uncertainty that entails, is the order of the day.

By contrast, energy-efficient measures work along the entire supply chain with a permanent reduction in primary energy consumption. Expanding renewables thus reduces losses on the generation side, while efficiency measures reduce demand on the consumer side. >

Renewables reduce losses on the generation side, while efficiency measures reduce demand on the consumer side.

Figure 1: Power price rises
Source: ENTSO-E (2022); EEX (as of 30 June 2022)

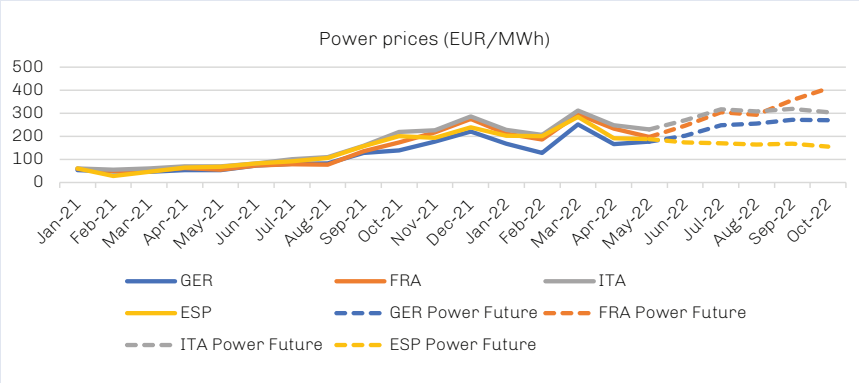
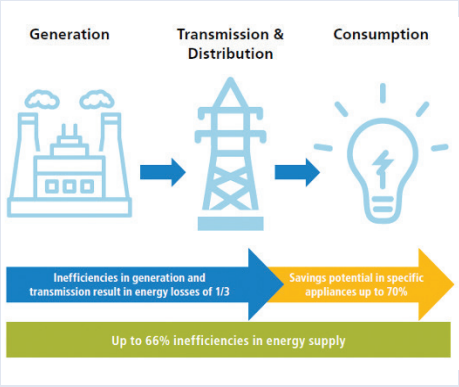


Figure 2: Fossil fuel inefficiencies
Source: Aquila Capital Research (2022)



On the one hand, industrial consumers can significantly reduce energy costs by self-supplying with renewable energy, such as rooftop solar systems or upcycling heat to clean electricity. On the other, they can also significantly limit their consumption by switch lighting to LED or installing heat pumps. Within cross-sectional technologies, i.e. widespread applications such as lighting and IT systems, there is potential for savings of up to 70%. Furthermore, many options are available to private households as well (see "Superbonus 110" later in the article).

Beyond boosting the competitiveness of European companies and preventing energy poverty among private households, this is also the key to reducing dependency on Russian gas, in particular.

Within the framework of the EU Commission's REPowerEU plan[1], energy efficiency plays a key role in avoiding Russian gas imports in the short term. In addition to doubling the capacity of rooftop solar systems, the focus is also on the expansion of additional 30 million heat pumps in order to decarbonize the building sector.

If these measures are implemented, the EU's gas consumption could potentially be more than halved by 2030.

1 *https://ec.europa.eu/commission/presscorner/detail/en/IP_22_3131*

Synergies between energy efficiency and renewable energy

On the one hand, renewables are an energy-efficient measure *per se*. For example, since wind power and solar PV do not require the use of fuel, they are 100% efficient from a primary energy perspective. On the other hand, energy-saving measures on the consumption side increase the share of renewable energies in the respective national energy mix.

This correlation can be illustrated by comparing the year 2019 and the year 2020, which is characterized by the ramifications of the pandemic.

The graph illustrates that, starting from lower energy demand in 2020, the shares of renewable energies have increased significantly. Particularly in countries with already high shares of renewable energies (e.g. Spain, Germany).

In view of the EU's goals to massively increase the share of renewable energy, the central importance of establishing energy efficiency as a quasi-independent energy source (first fuel) becomes clear.

Figure 3: Renewable energy consumption during the pandemic
Source: Aquila Capital Research based on data from ENTSO-E (2022)

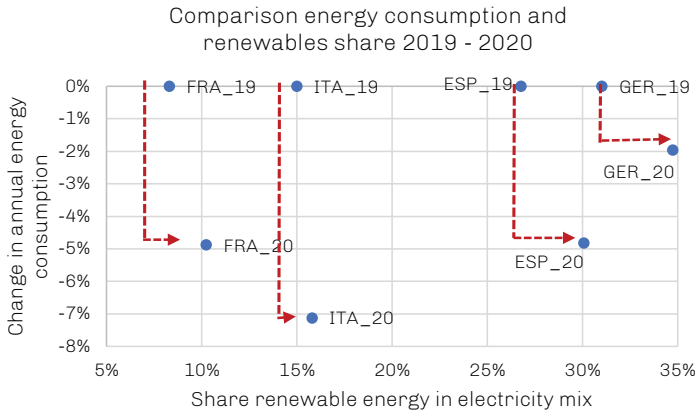
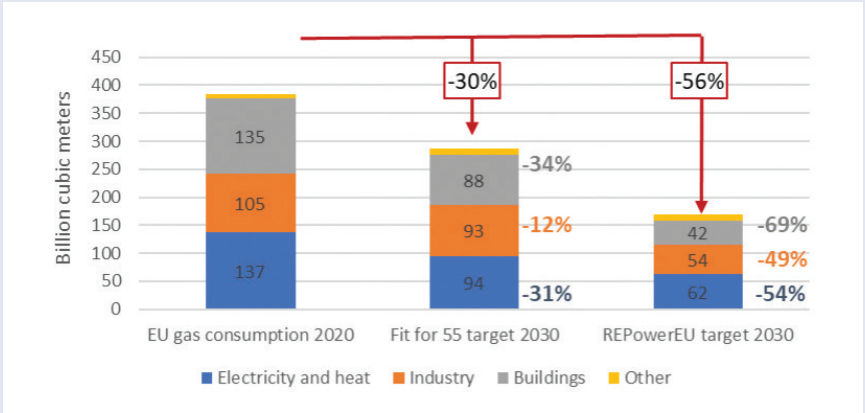


Figure 4: EU Gas consumption by sector and scenario targets 2030

Source: EU Commission; Bloomberg New Energy Finance (2022)



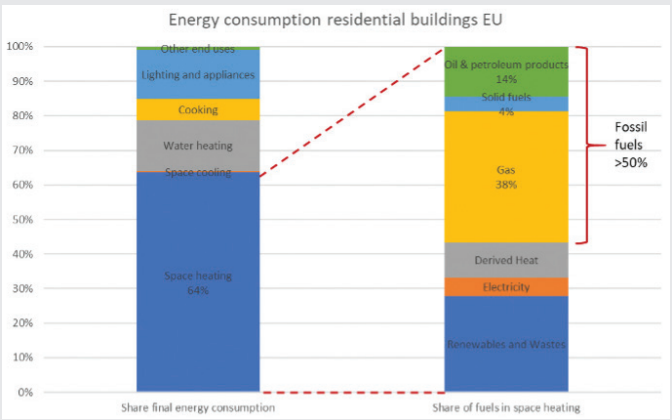
Energy efficiency has the power to drastically accelerate the energy transition.

As Figure 4. illustrates, the intensity of current political objectives requires that even compared to the ambitious "Fit for 55" package, the target for this decade has been almost doubled.

The technologies are available, there are limited alternative options and the will exists to implement efficiency measures. However, the high initial investment costs for implementation continues to be a barrier. At a time when, based on commodity prices, inflation is already being exacerbated by second-round effects, interest rate spreads of member countries are continuously increasing and companies and private households are burdened with increasing price pressure, solutions must be found to implement the financing for efficiency measures.

Example: Italy's Superbonus 110

Under a scheme called "Superbonus 110", the Italian government creates incentives for the energy-efficient refurbishment of buildings. The cost of boosting the efficiency of buildings can be claimed at a rate of 110% against tax. Refurbishments that include, for example, improved thermal insulation and replacement of fossil heating systems with heat pumps, open the door to a tax deduction of 110%. This can either be claimed over a five-year period or transferred to third parties such as banks.



Because these tax credits can be sold forward, the projects can be financed without financial contribution from the landlord.

Source: Eurostat (2022)

In Italy the cost of boosting the efficiency of buildings can be claimed at a rate of 110% against tax.

While government budgets are already stretched by the pandemic and the impact of inflation, private capital must be mobilized to fill the funding gap. In this context, energy contracting can accelerate development. In contracting, the technical implementation of energy efficiency measures is the responsibility of an Energy Service Company (ESCO), while private investors provide the financing. The high savings potential enables consumers to compensate investors with part of the savings. In this way, technical know-how and capital come together, while the companies benefit from the cost savings from day 1 – in a classic win-win.

This model virtually enables credit financing at negative interest rates, with no additional balance sheet burden. While in the past many energy-efficient measures offered attractive returns for private investors, the incentives for consumers as well as investors have increased alongside energy costs.

Challenges arise, however, especially in the building sector. On the one hand it is still heavily dependent on fossil energy sources, primarily gas, and on the other hand requires a very small-scale business structure?

In this context, synergies between the private sector and government subsidy programmes are of central importance. One example is the Italian "Superbonus 110", which has already boosted efficiency measures in the residential segment. >

Energy efficiency has the power to drastically accelerate the energy transition. The focus of private investors on sustainable investments makes it possible to provide the necessary capital, but the implementation of a sound investment strategy needs to navigate the complexity of smaller-scale projects and, in our view, requires a dedicated team focused on specific investment origination and execution. It is an ongoing responsibility of governments to create efficient and intelligent framework conditions.

Aquila Capital is an active and experienced investor in energy efficiency with deep know-how in the energy markets and especially in renewable energies.

Reducing primary energy consumption is paramount and the benefits of doing so – lower energy prices, energy security, household savings, competitiveness, productivity, and carbon emission reductions – are hugely attractive.

Lars Meisinger

Lars Meisinger oversees Aquila Capital's international client advisory and corporate development. He has been working in the finance sector since 2001. Prior to joining Aquila Capital in 2016, Meisinger was responsible for strategic product development at UBS Asset Management. He previously served as Chief Operating Officer at BlackRock Alternative Investors for the EMEA region. His long professional experience includes eight years in different management roles at Man Group and senior positions at AXA Investment Managers, in both London and Frankfurt.

Peter Schnellhammer

Peter Schnellhammer is Investment Research Analyst at Aquila Capital. He has more than six year's experience in Strategic Research and Alternative Investments. Prior to joining Aquila Capital in 2019, he focused on macroeconomic research of Real Estate markets. Schnellhammer holds a master's degree in Economics from University Rostock.