



Global Institute for  
Structure relevance,  
Anonymity and  
Decentralization i.G.

**GISAD statement on [https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13141-Digitalising-the-energy-sector-EU-action-plan\\_en](https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13141-Digitalising-the-energy-sector-EU-action-plan_en).**

GISAD (Global Institute for Structure relevance, Anonymity and Decentralisation i.G.) is an institute in founding. GISAD wants to develop a digital system (EU-D-S) from the perspective of the citizens of Europe, which can hold its own in system competition with gatekeepers and a social credit system.

The aim of GISAD is to support the creation of a holistic Marshall Plan, as called for by the President of the European Commission, Ursula von der Leyen. The core of the Marshall Plan must be a digital concept adapted to civil rights and diversity. If individual measures are without an overall system of their own taken, Europe runs the risk of losing the system competition to other economic areas such as a centrally controlled China.

- GISAD's opinion is subject to the proviso that it is to be as part of an overall digital concept understood (multiple use of the same infrastructure without additional costs).

GISAD has defined three goals on which a Marshall Plan should focus:

1. The optimal refinement and simple exploitation of digital data, while maintaining diversity and performance-adopted involvement of all parties involved in the value creation.
2. The stigma-free, lifelong digital inclusion of all citizens with incentives for self-development.
3. The digital guarantee of the necessary state tasks to maintain security for citizens, the economy and the state, while preserving pre-digital democratic achievements.

#### **Challenges:**

GISAD welcomes the EU Commission's initiative to digitise the energy sector. The goals for energy efficiency, growth and employment and IT security can only be achieved if as many end users as possible are involved in the development of solutions that are adequate for them. IT must provide as flexible a framework as possible for this. Digitization must not be in terms of a theoretical optimization of energy efficiency thought of, but must be to a socially viable concept subordinated. It makes sense to introduce a global CO<sup>2</sup> price if this affects not only end consumers, but also the manufacturers of new technology and the economy in general. This central tax instrument should be supplemented by an incentive system for local craftsmen and consumers. A digital concept can build on this. For first GISAD comments see <http://gisad.eu/eu-initiative-anpassung-anden-klimawandel/> and <http://gisad.eu/de-eu-initiative-energieeffizienz-ueberarbeitung-der-richtlinie-ueber-die-gesamtenergieeffizienz-von-gebaeuden/>.

#### **The problem will be using two real examples described:**

Two end users are each optimizing a detached single-family home built in 1960.

End consumer 1 leaves the building structure without insulation. Due to the central subsidy of the federal government, he buys an electric car in 2020. In 2021 due to the subsidy, he replaces his oil heating system with an air-source heat pump and new panel radiators. In the winter months, this will only be able to reach the required radiator temperature by means of electric auxiliary heating. An economic efficiency is of the plant not guaranteed. A PV system will not be purchased. It is not guaranteed that the purchased electricity for the

electric vehicle and the air source heat pump will come from renewable energy generation. It was not considered how much CO<sup>2</sup> was released for the construction of the electric car. The 10 years old car could have been for many more years driven. It can also be assumed that the end user could have continued to heat with oil for many years (decades) before releasing the amount of CO<sup>2</sup> that was produced for the production of the new panel radiators and the air source heat pump. This decision-relevant information is not available to the customer.

End consumer 2 was converting the attic in 2010. About half of the house remains in the old stock, which is to remain largely untouched at this time. Windows with triple glazing were been in the new stock installed. It has been highly energy insulated. A controlled ventilation system has been with heat recovery installed (automatic ventilating). A 10 KW PV system has been in 2016 installed. An air conditioning system has been for the attic bedroom installed too. A control program will ensure that is the air conditioning only switched on when there is a surplus of electricity. In 2018 to 2020, windows in the old building will gradually be with triple glazed windows replaced. High-energy insulation has been applied. As these measures were to the situation on site tailored and not to subsidy programmes, subsidies were largely dispensed with. Despite the high-energy insulation, it will not be possible to heat the existing radiators economically with a brine heat pump (costing around 50,000 euros) or an air heat pump (costing around 40,000 euros). Probably, at least in cold winters, electric auxiliary heating would be necessary to achieve the required radiator temperature in the existing radiators. Alternatively, the installation of a smaller new oil heating system with solar support is planned (costs approx. 8,000. Euro). If the end consumer 2 wants to invest 40.000,- Euro, he will put another 20 KW PV on his north roof (yield about 40 percent worse than on a south roof). Infrared heaters already installed as emergency heating, which then relieve the oil heating when the electricity yield is sufficient. In terms of an ecological footprint, end consumer 2 is in a much better position than end consumer 1, even if the concrete figures are not known. The biggest challenge for end consumer 2 is the lack of proper incentive systems for tradesmen and manufacturers. The only interest is to throw as many new systems as possible onto the market and thus even increase CO<sup>2</sup> emissions. Since central residential ventilation systems are relatively rarely used, even though they are economical, end user 2 cannot find a tradesman to maintain them. The PV system was in the year 2020 supplemented by an 8.5 KW battery. Here it became apparent that the manufacturer of the inverter was not interested in being compatible with itself. Instead of an upgrade, the entire inverter had to be for the battery replaced. The new inverter is not able to report the exact yield surplus to switch the air conditioner like the old unit. Despite other information in the brochure, the manufacturer is still not able to display the yield of the inverter on the intranet. This would require a permanent online connection, which End User 2 rejects for reasons of IT security.

As a result, efforts to use technology as economically and CO<sup>2</sup>-efficiently as possible are not rewarded, but manufacturers are encouraged to replace old equipment that is still in working order with new equipment, without having been the corresponding CO<sup>2</sup> reduction effects proven.

#### **A European infrastructure for data exchange must:**

- Calculate energy efficiency decentral for each object, taking into account a "product carbon footprint". For each energy producer in the portfolio, manufacturing, extraction, transport of raw materials, in-

intermediate products, production and distribution are to be deducted from the "product carbon footprint" (business-as-usual CO<sup>2</sup> expenses). Use, after-use and disposal/recycling remain. These values are to be in a table and set against the measured real consumption entered.

- Promote load management concepts, which with the help of artificial intelligence, can provide as precisely as possible the amount of additional electricity to volatile power sources in order to achieve load balancing in a decentralized manner in the object or a region.
- Promote business models and digital systems based on them, in which additionally required energy can be among several decentralized load-balancing systems exchanged. This functions in an anonymous way and without the exchange of personal data.

#### **Empowerment is of citizens achieved through:**

- Promotion of digital support for the energy self-sufficiency of properties,
- Technology-neutral funding for all those involved in the value creation process, depending on measured actual CO<sup>2</sup> savings effects.
- To promote better products and concepts with a higher degree of self-sufficiency while maintaining the same "product carbon footprint".
- Preference of expansion of existing systems over complete replacement by prescribing digital interfaces that are open to the future and that take into account all expansion possibilities known according to the state of the art.
- promote measures to improve the self-sufficiency of a region (e.g. first load balancing of a region within the framework of a decentralised, user-controlled, virtual power plant) see <http://komon.gettime.de/patentanmeldungen/>.
- To pay a CO<sup>2</sup>/autarky bonus to manufacturers and craftsmen afterwards, if the achievement of the envisaged targets has been confirmed on the basis of the database and maintenance has been carried out.
- Promote concepts in which the annual actual energy savings are with the energy savings agreed compared with the tradesman and automatically communicated. Such notifications are also possible by upgrading old oil and gas tanks (electronic quantity sensors).

#### **Cybersecurity is funded by:**

- Decentralised load management concepts, which only feed electricity into the grid or request it when all consumers in the property or region have consumed their own energy in an optimally coordinated manner with consumption and yield.
- Promote concepts in which energy consumers are not permanently connected to the Internet, but only establish an encrypted connection via a decentralized home central unit when and as long as absolutely necessary.
- Promote concepts in which switching of devices cannot be triggered directly from the Internet, but only indirectly through decentralized object control units.
- Promote concepts in which minimal protocols and unidirectional connections ensure that is manipulation via the Internet largely excluded.