ENERGY

Global public procurement factsheet

This factsheet provides an overview of the challenges and opportunities facing the energy sector in the context of global climate emergency. It summarises the innovative actions GLCN cities have taken to address those issues locally through public procurement.

Background

In the context of the current climate emergency and of the health and socio-economic crisis triggered by the COVID-19 pandemic that the whole world is facing, a global energy transition towards renewables, energy efficiency and electrification is urgent, especially considering how pivotal the energy sector is to our modern economies and how impactful it is on the environment. Local governments must take action now and set realistic but ambitious targets to fight the climate emergency. The sector is facing the following challenges which urgently require to be addressed:

✪ Carbon-dioxide emissions increasing: CO₂ emissions have increased 1.3% each year, on average, during the period 2015-2019 (IRENA 2020) and cities themselves are responsible for more than 70% of the world’s energy related emissions (CDP 2018). When countries adopted lockdown measures to contain the spread of COVID-19, an 8.8% decrease in global CO₂ emissions was registered in the first half of 2020 (Z. Liu et al. 2020); however, this reduction could have an irrelevant impact on the total concentrations of GHGs accumulated in the atmosphere over time and therefore a structural change in the world’s economies is needed (IRENA 2020).

✪ Investing in renewables is necessary: More than 90% of the needed CO₂ emissions reduction can be achieved through renewable energy supply, increased electrification of energy services, and energy efficiency (notably, renewable energy and electrification alone deliver 75% of reductions) (IRENA 2019). A recent IEA report shows that the renewable energy sector reported a strong growth during 2020 (in contrast to the fossil fuels sector), accounting for circa 90% of the increase in total power capacity and it is expected to reach a record growth in 2021. Encouraging data from 2018 already show that more than 100 cities get at least 70% of their electricity from renewable sources such as solar, wind, geothermal and hydropower. It is therefore crucial to supply energy from renewable sources.

✪ Growing demand for energy and COVID-19 impact: Before the COVID-19 crisis hit the world in late 2019, energy demand was predicted to grow worldwide by 12% in the years 2019-2030 (IEA 2020). When countries adopted lockdown measures to contain the spread of the virus, a severe disruption was also caused to the energy sector. A significantly reduced energy demand was experienced across the world, recording a -3.8% in the first quarter of 2020 compared to the same period in 2019, according to the IEA’s Global Energy Review 2020. The report indicates that until mid-April 2020 countries in full lockdown were experiencing an average 25% decline in energy demand per week and countries in partial lockdown an average 18% decline. The pandemic totally changed the perspective on global energy investments, bringing a lot of uncertainty and vulnerabilities. In May 2020, the IEA projected a 20% fall in energy investments in 2020 compared to the previous year, due to lockdowns but also to the strong fall in revenues. The lockdown measures of 2020 had several direct and indirect effects also on energy consumption: for example, research shows that there was a significant increase in residential power demand in contrast to a substantial decrease in commercial and industrial loads; also, due to the closure...
of educational institutes worldwide, several institutes have shifted to online classes to continue education which also affected the power systems (Madurai, Elavarasan et al. 2020). According to new projections (IEA’s Global Energy Review 2020), the possible scenarios are uncertain, but the energy demand will anyway continue to grow, especially if we consider that the global population is set to reach over 9 billion by 2050 (UN 2019). It is therefore key to direct that demand towards sustainable resources of energy. For example, in pre-COVID projections of 2015, the IEA expected that energy efficiency would have a crucial role in decreasing the world energy demand to one-third by 2040.

✪ Energy efficiency as a priority: According to the IEA, energy efficiency measures can be financially convenient for public budgets: in fact, these measures lead to energy savings and therefore less spent on energy bills; they can also increase income through sales tax on more valuable energy efficient products and services, as well as increased real estate tax on more valuable energy efficient buildings; finally, they can also deliver indirect financial savings as a result of reduced social welfare expenses spent on energy subsidies. Investing in energy efficiency public buildings means also reducing GHG emissions, as buildings in urban areas are responsible for approximately 40% of energy consumption and 36% of CO₂ emissions in the EU (See the EU Directive 2010/31/EU on the energy performance of buildings).

✪ Limited energy access: SDG no. 7 aims to ‘ensure access to affordable, reliable and modern energy for all by 2030’. Before 2020, 940 million people did not have access to electricity and 3 billion people did not have access to clean fuels for cooking (Ritchie 2019). The humanitarian and social consequences triggered by the COVID-19 crisis may have worsened this situation and jeopardised access to basic electricity services for more than 100 million people who previously had access to them (IEA 2020). It is crucial that national and international authorities take action to contrast the rise in poverty generated by the pandemic and provide access to clean and sustainable energy for all.

The power of public procurement

The public sector is a strategically important market for the energy transition. As major energy purchasers, governments can play a critical role, especially if we consider that the world’s public procurement spend is about US$13 trillion per year (Open Contracting Partnership 2020) and that in OECD countries procurement represents 12% of GDP. In the EU alone, public authorities spend around 14% of GDP annually on public procurement and the energy sector is a key source of demand (EU Commission 2020). It is evident that this relevant volume of spending, if well used, can foster environmental policy goals.

For example, contracting authorities can integrate tender criteria and specifications for energy saving and clean energy supply or invest in renewable energy power plants.

Three key areas of action for public procurement on this topic are:

1. Procuring electricity efficiency;
2. Procuring energy efficiency retrofit interventions;
3. Procuring clean energy.

Members of the Global Lead City Network on Sustainable Procurement (GLCN) have an extensive track record of leading on this topic, using their public procurement power to drive sustainable change in their local energy systems.
GLCN cities are fully determined to use their purchasing power to deliver greater energy efficiency and source clean and renewable energy. This is for example reflected in a list of targets that 9 of the network’s cities have set for the future on the topic:

**Buenos Aires (Argentina):**
By 2025, 20% of the energy used by large users of the public sector of the city will come from renewable sources; by 2020, all purchases of electricity or natural gas using devices will include sustainability criteria.

**Budapest (Hungary):**
By 2025 more than 900 new electric chargers will be installed in the city.

**Cape Town (South Africa):**
By 2030, net zero carbon emissions from the City’s own buildings (both existing and new), and net zero carbon emissions for all new buildings in Cape Town. By 2050, net zero carbon emissions for all existing buildings in Cape Town.

**Helsinki (Finland):**
By 2035, operations of energy companies owned by the city will reduce residents’ district heating emissions by 74% compared to 2015 levels.

**Oslo (Norway):**
By 2030, the City established a 10% reduction of total energy consumption, compared to 2009 levels. There are two areas of priority: on the one hand, a larger share of Oslo’s energy will be produced locally, and a variety of energy solutions will complement and supplement each other; on the other hand, Oslo’s buildings will use electricity and heat efficiently and reduce their energy consumption.

**Pittsburgh (USA):**
By 2030, Pittsburgh will reduce emissions by 50% from 2003 amounts, will power all City facilities with 100% clean energy and reduce energy and water consumption in city owned buildings by 50%.

**Rotterdam (The Netherlands):**
By 2022, 100% of the electricity used for public functions will be delivered by local renewables (wind and solar power). By 2030, the city will achieve a 40% reduction in the energy consumption of municipal buildings and by 2050, almost 100% of municipal buildings will be carbon neutral.

**Seoul (South Korea):**
By 2020, all indoor lighting in public buildings will be replaced by LED, 200 MW of city energy will be supplied by solar PV and all new city owned buildings will be certified ‘best in class’ and achieve grade 1 of energy efficiency.

**Tshwane (South Africa):**
By 2030 the City plans to increase the energy efficiency in public buildings by 50%.
Sustainable public procurement of energy in practice

GLCN cities are finding innovative ways to use their procurement activities to transition towards clean and sustainable energy sources and energy-efficient cities.

The section below showcases the member cities’ activities, illustrating how sustainable public procurement practice can help address the challenges associated with the transition towards cleaner energies and energy-efficient cities in the three action areas for public procurement mentioned above.

1. Procuring electricity efficiency

The challenge

What can public procurement do?
Lack of energy efficiency is a key issue that often affects public street lighting systems and ICT equipment. As mentioned, energy efficiency is key to the transformation of energy systems, given that it helps to limit energy spending and eventually to reduce GHG emissions.

Public authorities can use their purchasing power to retrofit lighting systems, eventually saving large amounts of electricity, decreasing public expenditure and reducing carbon emissions in the long term. This can be done by including sustainable criteria in tender procedures and requiring efficient technology such as LED lighting or motion sensors for saving energy consumption.

Buenos Aires: The first Latin American capital to replace 100% public lighting with LED technology

The capital city of Argentina, Buenos Aires is a member of GLCN highly committed to sustainable development through public procurement and since 2012 it has been including sustainability criteria in public procurement processes, using a flexible, staggered and progressive implementation strategy. Among the commitments of the 2020 Action Plan, the City included a target of 100% LED lighting in public buildings, in order to reduce public spending, advance energy efficiency and also lead by example and incentivise citizens to shift to LED lighting.

The Municipality included environmental criteria such as energy efficiency standards in tender specifications and managed to transition to LED lighting in all public spaces by June 2019 (both indoor and outdoor spaces including viaducts, underways, underpasses, bridges, green spaces, public buildings and monuments) with a centralized control panel that allows to control all the city lights and enhance a stronger security as LED lights facilitate facial recognition and the right perception of colors both live and in CCTVs.

Switching to LEDs resulted in energy savings of more than 50%, which created a savings of 85,000 MW per year (the equivalent of energy used by 25,000 households per year) and consequent savings of 34,000 tons of CO₂ per year.

More information on this case study can be found here.

Cities in action

→ #EnergyDemand → #EnergyEfficiency
→ #SavingElectricity → #FinancialSaving → #Pandemics
2. Procuring energy efficiency retrofit interventions

The challenge

Urban buildings are notoriously large energy consumers. In the sole EU, 75% of buildings are energy inefficient, determining energy waste and high maintenance costs and needs retrofitting interventions. Unfortunately, these types of renovation works are often associated with high upfront costs and insufficient skills in the construction industry (EU Parliament 2016). It is estimated by the EU Commission that renovating existing buildings and implementing smart technology could reduce the EU’s total energy consumption by 5-6% and decrease CO₂ emissions by roughly 5%. Public authorities own and operate a large number of buildings in urban areas and therefore they are the most suited candidates to procure energy efficiency retrofit works and lead the transition towards sustainable urban buildings. These retrofit interventions may include replacement of light bulbs with LED technology, insulation of buildings, installation of solar PV panels on roofs and so on.

What can public procurement do?

Cities in action

Energy efficiency in municipal operations in Cape Town

The City of Cape Town consumes approximately 4% of all electricity used in Cape Town. As such, it is committed to improving the management of energy use in all its municipal operations and has been actively involved in energy efficiency within council owned facilities since 2009. From 2009/2010 to 2019/2020 (11 years), this initiative saved over 231 GWh of electricity, which translates to avoided emissions of 229 035 tCO₂e (metric tons of carbon dioxide equivalent). The programme as a whole (including building retrofits with embedded generation) is expected to produce cumulative net savings in the region of R228 million by 2025/26.

Notably, since 2009, the City has been managing and coordinating a successful Building Energy Efficiency Retrofit Programme. Since the inception of this programme in 2009, the City has completed the retrofitting of 60 large municipal facilities. 4 buildings underwent full energy efficiency retrofits, 16 facilities were retrofitted with EE fluorescent (T5) lighting with passive infrared (PIR) occupancy sensors and 40 facilities have been retrofitted with the new EE technology of LED lighting with PIR occupancy sensors. All of the traffic lights within the City area have been retrofitted with LED lighting technology and 34% of all street lights have been retrofitted with energy efficiency street lighting.

The City is also implementing a SmartFacility programme, an integrated and automated resource data management system for City facilities. Approximately 847 smart electricity meters have been installed in 557 facilities.
3. Procuring clean energy

The challenge

What can public procurement do?
Given that renewables can be key in the reduction of CO₂ emissions (as mentioned, renewables together with electrification could achieve 75% of the needed reduction of emissions) it is extremely important to invest in this sector. Thanks to policy support the renewable energy has grown in the past years and will continue in the future. Renewables are strongly engaged in the electricity sector; however, given that electricity represents only one fifth of the total energy consumption worldwide, renewables must play a key role also in the transportation and heating sectors (IEA).

Public authorities can use their strong purchasing power to procure energy supply for heating and illuminating from alternative sources. This means, for example, installing energy generations on site like solar PV panels on public buildings, investing in renewable energy power plants that can increase energy access to people or imposing power suppliers to provide electricity from renewable sources. Contracting authorities can include criteria and specification in tenders to leverage production and consumption of energy.

Cities in action

Rotterdam’s plan to source electricity from local renewables by 2022
The GLCN member Rotterdam consumes 80 GWh annually for all kinds of public functions. The City decided to leverage public procurement to purchase electricity generated by solar panels and wind turbines located either in Rotterdam or on Dutch soil.

The long-term contract that started in 2020 required to deliver only renewable energy from new wind and solar plants by 2030; but eventually the two suppliers have guaranteed to dispense 100% from new renewable energy system capacity already from 2022, half of which will be generated in Rotterdam. They are required to prove the origin of the energy (GVO) as well: a GVO is equal to 1 megawatt hour (MWh) of electricity produced from renewable sources. The certificates are issued and registered by the national organization CertiQ (learn more). Moreover, the tender documents established to award points during the tender evaluation for activities that would accelerate the energy transition in the municipality through public involvement, empowerment of local energy projects and business development, in order to support the local sustainability program.

Cities in action

Oslo’s ambitious plan for reducing energy consumption and procuring clean energy by 2030
Oslo’s 2030 target for reducing energy consumption by 10% relates to all sectors, including building heating and transport, among others. The City targeted two areas of priority: on the one hand, a larger share of Oslo’s energy will be produced locally, and a variety of energy solutions will complement and supplement each other; on the other hand, Oslo’s buildings will use electricity and heat efficiently and reduce their energy consumption. In particular, Oslo will use less energy, produce more energy locally, install more solar panels on roofs, and use energy more flexibly. District heating from Oslo’s waste incineration plants produces renewable energy for large parts of the city. A transition to electricity use in the transport sector will reduce energy consumption, as electric cars are more efficient than combustion engine cars. Oslo will facilitate more pilot areas with flexible and innovative energy solutions such as energy storage and smart management of energy consumption. Furusset is Oslo’s pilot area for flexible and innovative energy solutions.

Cities in action

The achievements of the City of Pittsburgh (USA) with renewables
The City of Pittsburgh (Pennsylvania) procured 100% renewable electricity for the first time in 2020 for all of their accounts through a REC (Renewable Energy Credit) purchase. They are currently in the process of finalizing their new energy supply agreement with their energy supplier to transition their accounts to a wholesale sub account aggregation, in order to be able to buy in the wholesale energy market (instead of retail) and therefore enable procurement of power purchase agreements for local wind or solar projects in Southwestern Pennsylvania. The City is also currently looking at developing project labor agreements to coincide with new generation projects.

For more information on the initiatives in Pittsburgh, have a look at the Pittsburgh Climate Action 3.0 and at the Marshall Plan for Middle America, a regional energy transition and green recovery strategy developed by the City together with other partners.
About the GLCN on Sustainable Procurement

The Global Lead City Network on Sustainable Procurement is a group of cities committed to drive a transition to sustainable consumption and production by implementing sustainable and innovation procurement. All participating cities are acting as ambassadors of sustainable procurement to lead to a resource efficient, low carbon and socially responsible society.

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