

**The proposed adaptation pathways are framed by the
geographic, economic and social context of the island
and is a result of a consultation process
with regional stakeholders**

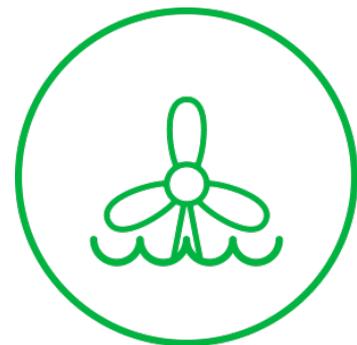
Click on the sector to see the specific recommendations 



TOURISM



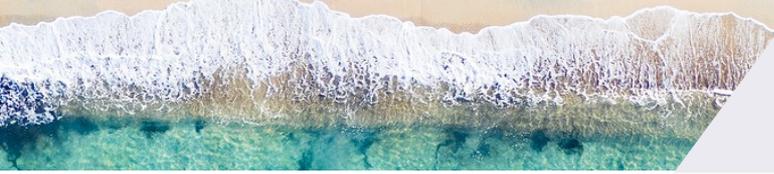
AQUACULTURE



ENERGY



**MARITIME
TRANSPORT**



<p>APT A - Pathway</p> <p>Minimum Intervention low investment, low commitment to policy change</p> <p>This policy trajectory assumes a no-regrets strategy where the lowest cost adaptation policies are pursued to protect citizens from some climate impacts</p>	Short-term (up to 2030)	Mid-century (up to 2050)	End-century (up to 2100)
	<p>Activity and product diversification</p> <p>Coastal protection structures</p> <p>Fire management plans</p> <p>Post-Disaster recovery funds</p> <p>Adaptation of groundwater management</p> <p>Zero sewage discharge to the sea</p>	<p>Public awareness programmes</p> <p>Coastal protection structures</p> <p>Fire management plans</p> <p>Pre-disaster early recovery planning</p> <p>Monitoring, modelling and forecasting systems</p> <p>Residual organic matter composting</p>	<p>Public awareness programmes</p> <p>Drought and water conservation plans</p> <p>Fire management plans</p> <p>Pre-disaster early recovery planning</p> <p>Monitoring, modelling and forecasting systems</p> <p>Forest fire prevention</p>

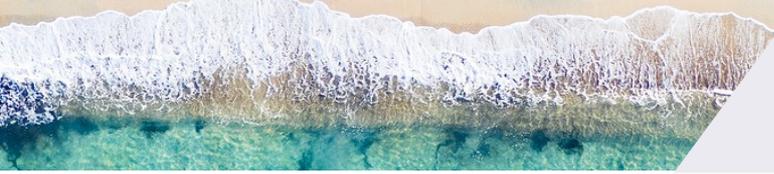
<p>APT B - Pathway</p> <p>Economic Capacity Expansion high investment, low commitment to policy change</p> <p>This policy trajectory focuses primarily on encouraging climate-proof economic growth but does not seek to make significant changes to the current structure of the economy</p>	Short-term (up to 2030)	Mid-century (up to 2050)	End-century (up to 2100)
	<p>Economic Policy Instruments (EPIs)</p> <p>Activity and product diversification</p> <p>Desalination</p> <p>Coastal protection structures</p> <p>Adaptation of groundwater management</p> <p>Dune restoration and rehabilitation</p> <p>Zero sewage discharge to the sea</p>	<p>Financial incentives to retreat from high-risk areas</p> <p>Public awareness programmes</p> <p>Desalination</p> <p>Coastal protection structures</p> <p>Monitoring, modelling and forecasting systems</p> <p>River rehabilitation and restoration</p> <p>Residual organic matter composting</p>	<p>Financial incentives to retreat from high-risk areas</p> <p>Public awareness programmes</p> <p>Beach nourishment</p> <p>Drought and water conservation plans</p> <p>Monitoring, modelling and forecasting systems</p> <p>River rehabilitation and restoration</p> <p>Forest fire prevention</p>

<p>APT C - Pathway</p> <p>Efficiency Enhancement medium investment, medium commitment to policy change</p> <p>This policy direction is based on an ambitious strategy that promotes adaptation consistent with the most efficient management and exploitation of the current system</p>	Short-term (up to 2030)	Mid-century (up to 2050)	End-century (up to 2100)
	<p>Public awareness programmes</p> <p>Tourist awareness campaigns</p> <p>Water restrictions, consumption cuts and grey-water recycling</p> <p>Coastal protection structures</p> <p>Mainstreaming Disaster Risk Management</p> <p>Monitoring, modelling and forecasting systems</p> <p>Dune restoration and rehabilitation</p> <p>Adaptive management of natural habitats</p> <p>Zero sewage discharge to the sea</p>	<p>Activity and product diversification</p> <p>Local circular economy</p> <p>Water restrictions, consumption cuts and grey-water recycling</p> <p>Coastal protection structures</p> <p>Mainstreaming Disaster Risk Management</p> <p>Monitoring, modelling and forecasting systems</p> <p>Dune restoration and rehabilitation</p> <p>Adaptive management of natural habitats</p> <p>Forest fire prevention</p>	<p>Activity and product diversification</p> <p>Local circular economy</p> <p>Water restrictions, consumption cuts and grey-water recycling</p> <p>Coastal protection structures</p> <p>Mainstreaming Disaster Risk Management</p> <p>Monitoring, modelling and forecasting systems</p> <p>Dune restoration and rehabilitation</p> <p>Adaptive management of natural habitats</p> <p>Residual organic matter composting</p>

<p>APT D - Pathway</p> <p>System Restructuring high investment, high commitment to policy change</p> <p>This policy direction embraces a pre-emptive fundamental change at every level in order to completely transform the current social-ecological and economic systems</p>	Short-term (up to 2030)	Mid-century (up to 2050)	End-century (up to 2100)
	<p>Economic Policy Instruments (EPIs)</p> <p>Public awareness programmes</p> <p>Water restrictions, consumption cuts and grey-water recycling</p> <p>Drought and water conservation plans</p> <p>Pre-disaster early recovery planning</p> <p>Adaptation of groundwater management</p> <p>Zero sewage discharge to the sea</p>	<p>Economic Policy Instruments (EPIs)</p> <p>Activity and product diversification</p> <p>Water restrictions, consumption cuts and grey-water recycling</p> <p>Coastal protection structures</p> <p>Pre-disaster early recovery planning</p> <p>Adaptation of groundwater management</p> <p>Distributed electric grids powered by renewables</p>	<p>Economic Policy Instruments (EPIs)</p> <p>Activity and product diversification</p> <p>Water restrictions, consumption cuts and grey-water recycling</p> <p>Coastal protection structures</p> <p>Pre-disaster early recovery planning</p> <p>Monitoring, modelling and forecasting systems</p> <p>Residual organic matter composting</p>

Vulnerability Reduction
 Disaster Risk Reduction
 Socio-Ecological Resilience
 Local Knowledge (provided by local stakeholders)





- **Activity and product diversification:** actions to diversify the tourism activities and products and aim to reduce seasonality and overload in infrastructures and ecosystems.
- **Public awareness programmes:** establish targeted programmes that raise awareness about climate change (specific values and protection needs) among guides, site managers and local communities.
- **Economic Policy Instruments (EPIs):** incentives designed and implemented with the purpose of adapting individual decisions to collectively agreed goals. Different type of instruments can be applied: pricing, environmental taxes, subsidies; trading; and voluntary agreements.
- **Financial incentives to retreat from high-risk areas:** to retreat or relocate settlements, infrastructure and productive activities from the original location due to their high exposure to floods, sea-level rise and storm surges.
- **Desalination:** is the process of removing salt from sea or brackish water to make it useable for drinking, and can contribute to adaptation in circumstances of current or future water scarcity problems.
- **Beach nourishment:** artificial placement of sand to compensate for erosion. Often aims at maintaining beach width (for tourism and recreational purposes).
- **Tourist awareness campaigns:** target behavioural change of visitors and aim to increase tourists (individuals and organisations) knowledge about climate change and the risk faced by tourism destinations.
- **Local circular economy:** an economic system aimed at eliminating waste and the continual use of resources that offers a valuable framework for reduced carbon emissions from materials (decarbonization) and increased resilience to climate change impacts.
- **Water restrictions, consumption cuts and grey-water recycling:** Restrictions of certain uses of water can be applied to allow water administration services to cope with water crises. Grey-water recycling is the reuse of non-drinkable water to cover water use needs that don't demand such a high-quality.

- **Pre-disaster early recovery planning:** the development of knowledge, good practices that aim to improve the living conditions of the affected communities, while facilitating the adjustments necessary to reduce the risk of future disasters.
- **Mainstreaming Disaster Risk Management (DRM):** plan and organize DRM along five stages including prevention, protection, preparedness, and response, recovery and review.

- **Adaptation of groundwater management:** (1) conserve groundwater reservoirs, limiting water use and optimizing water reuse, and (2) restore or increase natural infiltration capacity.
- **Monitoring, modelling and forecasting systems:** information system that provide timely and reliable climate information, up-to-date data on the occurrence and severity of extreme events, possible impacts and their duration.
- **Dune restoration and rehabilitation:** strengthening of the flood safety and sand reservoir functions of dunes. Dune erosion happens as a result of wind action, marine erosion, human activities and Sea Level Rise.
- **River rehabilitation and restoration:** emphasise the natural functions of rivers and create vegetated buffer zones alongside watercourses. Improving micro-climatic conditions, reducing run-off and erosion, and increasing groundwater recharge.
- **Adaptive management of natural habitats:** preservation of ecosystem services which are essential for human well-being. Include: understanding species response; make space for the development of rivers and coasts; aid gene flow; species translocation; targets and conservation mechanisms/plans.

- **Coastal protection structures:** different types of artificial structures designed to protect the coast from sea level rise or storms.
- **Drought and water conservation plans:** drought management plans with the aim to reduce the economic, social, and environmental consequences of drought and water scarcity, reduce the loss of water and improve efficiency in the sector.
- **Fire management plans:** actions with a wide range of application such as early warning detection, escape routes and advice to citizens and tourists, mobilization and suppression of unwanted and damaging fires, or use of fire to manage fuel.
- **Post-Disaster recovery funds:** minimize the economic and social impacts (which may include future loss of the touristic destination attractiveness) that can occur in a post-disaster context.

- **Zero sewage discharge to the sea:** enhance sewage treatment system: (1) mitigate the impact of seawater heating on the seagrass meadows, and (2) contribute to water supply with a lesser energy-demanding water source than desalination.
- **Residual organic matter composting:** sewage sludge, organic waste from agriculture and the organic fraction are currently disposed in poorly managed landfills, releasing methane. Composting would contribute to decarbonization and landscapes rehabilitation.
- **Forest fire prevention:** incentivise forest traditional cattle-based and farming activities in the periphery of forest masses uses to reduce forest flammability, performing as firewalls. Social abandon of traditional uses and upper-land agriculture lead inextinguishable forest fires.
- **Distributed electric grids powered by renewables:** Develop distributed electric grids based on renewable sources (photovoltaic, wind) to power desalination plants and tourist firms consortia, to reduce electricity cost and emissions, and increase the stability of the general electric grid while increasing renewables participation in the electric mix.





APT B - Pathway	Short-term (up to 2030)	Mid-century (up to 2050)	End-century (up to 2100)
	<p>Economic Capacity Expansion high investment, low commitment to policy change</p> <p>This policy trajectory focuses primarily on encouraging climate-proof economic growth but does not seek to make significant changes to the current structure of the economy</p>	<p>Tax benefits and subsidies</p> <p>Awareness campaigns for behavioural change</p> <p>Submersible cages</p> <p>Climate proof aquaculture activities</p> <p>Feed production</p> <p>Selective breeding</p> <p>Increase POSEI and REF incentives</p>	<p>Tax benefits and subsidies</p> <p>Awareness campaigns for behavioural change</p> <p>Submersible cages</p> <p>Risk-based zoning and site selection</p> <p>Feed production</p> <p>Selective breeding</p> <p>Promote tourist and non-tourist consumption</p>

APT C - Pathway	Short-term (up to 2030)	Mid-century (up to 2050)	End-century (up to 2100)
	<p>Efficiency Enhancement medium investment, medium commitment to policy change</p> <p>This policy direction is based on an ambitious strategy that promotes adaptation consistent with the most efficient management and exploitation of the current system</p>	<p>Awareness campaigns for behavioural change</p> <p>Addressing consumer and environmental concerns at the local level</p> <p>Short-cycle aquaculture</p> <p>Climate proof aquaculture activities</p> <p>Disease prevention methods</p> <p>Species selection</p> <p>Best Management Practices</p> <p>Create educational visits</p> <p>Reformulate the POEM (Zoning)</p>	<p>Awareness campaigns for behavioural change</p> <p>Addressing consumer and environmental concerns at the local level</p> <p>Short-cycle aquaculture</p> <p>Risk-based zoning and site selection</p> <p>Disease prevention methods</p> <p>Species selection</p> <p>Selective breeding</p> <p>Create educational visits</p> <p>Review and streamline administrative processes</p>

Vulnerability Reduction
 Disaster Risk Reduction
 Socio-Ecological Resilience
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- **Tax benefits and subsidies:** financial public policy instruments to promote or benefit economic or aquaculture sustainable practices and operator's overall resilience to climate change.
- **Awareness campaigns for behavioural change:** aim to increase the knowledge of individuals and organisations, it could also be relevant in a region affected by a particular climate threat, groups of stakeholders, and the general public.
- **Submersible cages:** Submersible cages are oceanic depth-adjustable and can be moved up and down in the sea to escape the worst effects of storms, parasite outbreaks, surface algal blooms and to keep species at an optimal temperature.
- **Addressing consumer and environmental concerns at the local level:** This option aims to promote economy and jobs to address the future challenges of climate change. The major challenges need to be underlined and linked to the key concerns and impacts on the aquaculture sector.
- **Short-cycle aquaculture:** shortens the farming period and the time in marine cages by stocking larger fingerlings in the nursery stage (land-based) or selecting species with a shorter culture cycle.

- **Climate proof aquaculture activities:** investments that consider climate change projections to manage future risks to infrastructures and improve operational safety conditions. E.g. strengthening mooring systems, cage structures and nets.
- **Risk-based zoning and site selection:** taking into consideration climate change scenarios when planning and selecting a site for a farm. E.g. marine cage operations should not select a site that is (or is expected to be) exposed to high waves or strong currents; pond farming operations should select sites with low risk of flooding.
- **Disease prevention methods:** preventive health measures such as vaccines, stronger fingerlings, probiotics, ensuring optimal water quality and implementing stricter hygiene procedures with the aim of reducing the risk of diseases now and in the future.

- **Feed production:** an important indirect impact to aquaculture is the change in fisheries production due to climate change. Aquaculture of finfish is highly dependent on fisheries for feed ingredients. This already a current problem with many fisheries overexploited and will only intensify in the future. Therefore, alternative feed ingredients are being developed such as insect meal and algae.
- **Species selection:** selecting species that are less sensitive to changes in the environment, less prone to diseases and less dependent on fish meal and oil.
- **Selective breeding:** genetic selection of species with a focus on developing strains with a higher tolerance to changes in temperature, that grow faster, and which are more resilient to diseases. For example, choosing species with a wider temperature tolerance range may reduce the risk of future mortality.

- **Best Management Practices:** Implementing Best Management Practices at farms which focus on food safety, fish health, environmental impact (including climate change) and social responsibility.
- **Create educational visits:** Students, schools, institutes and organisations can organise visits to the fish farms to learn about aquaculture and the interactions between aquaculture and the environment. These visits can also increase knowledge on different impacts on aquaculture including man-made and climate impacts.
- **Promote aquaculture cuisine:** promote aquaculture via online information and uses local restaurants. Aquaculture itself can be seen as an adaptation measure to climate change as an alternative to wild fisheries, which production and yield will reduce due to climate change. Therefore, promoting aquaculture species in restaurants or setting up specific 'aquaculture' restaurants will provide both a cultural experience and promote farmed products.

- **Increase POSEI and REF incentives:** Increase incentives that compensate for the distance and insularity in the POSEI and the REF. Also guarantee viable commercial margins, which will be affected by climate change.
- **Promote tourist and non-tourist consumption:** The increase in consumption on the islands helps to reduce emissions, enhances the km 0 concept, contributes to the development of food sovereignty with high quality protein, and strengthens social cohesion.
- **Knowledge transfer and financial support of emerging industries:** Optimize the transfer of knowledge from research groups to the industry, aimed at enabling local production of raw materials and juveniles, and the introduction of new species more resilient to CC and its effects; also, financial support scheme to this industry until it reaches the optimal scale.
- **Reformulate the POEM (Zoning):** To address the impact of climate change, the criteria for determining areas to be used in the future need to be improved and expanded: planning. Increasing depth reduces impact, improves habitats, and increases production.
- **Review and streamline administrative processes:** Improving governance is key to addressing the impact of climate change. Reviewing and streamlining administrative procedures will help minimize the impact on production volumes.
- **Favour the development of off-shore aquaculture:** It means an increase in the area of innovation, technological change. To introduce a cultivation system that does not exist on the islands. It improves the resistance to catastrophic weather episodes as a result of climate change and consequently contributes to reducing the environmental impact, favouring an increase in production.





APT C - Pathway 	Short-term (up to 2030)	Mid-century (up to 2050)	End-century (up to 2100)
	<p>Efficiency Enhancement medium investment, medium commitment to policy change</p> <p>This policy direction is based on an ambitious strategy that promotes adaptation consistent with the most efficient management and exploitation of the current system</p>	<p>Social dialogue for training in the port sector</p> <p>Diversification of trade using climate resilient commodities</p> <p>Refrigeration, cooling and ventilation systems</p> <p>Climate proof ports and port activities</p> <p>Early Warning Systems (EWS) and climate change monitoring</p> <p>Marine life friendly coastal protection structures</p> <p>Coastal protection structures</p> <p>Integrate ports in urban tissue</p> <p>Adapt infrastructure to climate threats</p>	<p>Social dialogue for training in the port sector</p> <p>Diversification of trade using climate resilient commodities</p> <p>Refrigeration, cooling and ventilation systems</p> <p>Climate proof ports and port activities</p> <p>Early Warning Systems (EWS) and climate change monitoring</p> <p>Marine life friendly coastal protection structures</p> <p>Hybrid and full electric ship propulsion</p> <p>Integrate ports in urban tissue</p> <p>Adaptation of recreational marinas to the main dangers derived from climate change</p>

- **Social dialogue for training in the port sector:** training into social and educational issues related with the gender equality and attracting the young to the sector, while tackling climate change. Facing and how the industry is adapting to change and preparing for the future.
- **Diversification of trade using climate resilient commodities:** to reduce dependency on trade of perishable goods and critical services, create larger stocks of goods that are climate resilient and consider whether is economically feasible, strategically justifiable and equitable.
- **Refrigeration, cooling and ventilation systems:** improve efficiency in order to reduce costs in warmer weather and maintain operations during heat waves. Ensuring the safety of passengers and workers, and manage goods that need low temperatures.

- **Climate proof ports and port activities:** investments that consider specific climate change projections to manage future risks in port infrastructures and improve operational safety conditions.
- **Early Warning Systems (EWS) and climate change monitoring:** to assesses climate risks and relay that information to decision makers, companies utilities and the general public in real time. Transport operators should integrate this tool in procedures in order to protect the safety of people and goods.

- **Marine life friendly coastal protection structures:** constructed with materials that maximize the fixation of marine organisms. Reducing climate change impacts on local ecosystems, provides water waste depuration and water quality bio-indicators inside the ports.

- **Combined protection and wave energy infrastructures:** combines sea protection structures with wave energy production. This can create economies of scale, increase coastal protection and further decrease wave propagation inside the port during normal operations.
- **Coastal protection structures:** groynes, breakwaters, artificial reefs and seawalls built in the shoreline, designed to protect the coast from sea level rise or storms, can be used to, e.g. drift and trap sediments, protect from erosion, absorb wave energy, or allow navigation.
- **Hybrid and full electric ship propulsion:** environmentally friendly for marine life, decreases carbon emissions and can increase ship manoeuvrability which is useful in small ports and under difficult weather conditions.
- **Integrate ports in urban tissue:** opening port areas to other activities, namely cultural, while gaining room in the urban landscape. This allows some port activities to be pooled from low-laying areas while leisure and cultural activities can access more waterfront space.

- **Adapt infrastructure to climate threats:** especially the electrical connection to ships during the stay in port (cold ironing), to climatic threats, and particularly to the rise in sea level.
- **Adaptation of recreational marinas to the main climate change hazards:** to stimulate, accompany and encourage the adaptation of recreational marinas to the main climate change hazards, in order to guarantee the operation and future expansion of recreational sailing.
- **Improve and ensure operational safety in ship repair:** against climatic events, including shipyards and workshops with deep-sea repair capacity.

 Vulnerability Reduction  Disaster Risk Reduction  Socio-Ecological Resilience  Local Knowledge (provided by local stakeholders)





APT B - Pathway <i>Economic Capacity Expansion</i> high investment, low commitment to policy change This policy trajectory focuses primarily on encouraging climate-proof economic growth but does not seek to make significant changes to the current structure of the economy	Short-term (up to 2030)	Mid-century (up to 2050)	End-century (up to 2100)
	Financial support for smart control of energy in houses and buildings Green jobs and businesses Demand Side Management (DSM) of Energy Review building codes of the energy infrastructure Energy efficiency in urban water management Biomass power from household waste Hydrogen as energy vector	Financial support for smart control of energy in houses and buildings Green jobs and businesses Demand Side Management (DSM) of Energy Review building codes of the energy infrastructure Energy efficiency in urban water management Urban green corridors Renewable technology hybridization	Financial support for smart control of energy in houses and buildings Public information service on climate action Demand Side Management (DSM) of Energy Upgrade evaporative cooling systems Underground tubes and piping in urban planning Urban green corridors Micro smart grids

APT C - Pathway <i>Efficiency Enhancement</i> medium investment, medium commitment to policy change This policy direction is based on an ambitious strategy that promotes adaptation consistent with the most efficient management and exploitation of the current system	Short-term (up to 2030)	Mid-century (up to 2050)	End-century (up to 2100)
	Green jobs and businesses Small scale production and consumption (prosumers) Collection and storage of forest fuel loads Review building codes of the energy infrastructure Grid reliability Energy efficiency in urban water management Biomass power from household waste Educational garden plots Micro smart grids	Green jobs and businesses Small scale production and consumption (prosumers) Energy storage systems Review building codes of the energy infrastructure Grid reliability Energy efficiency in urban water management Urban green corridors Educational garden plots Promote cogeneration	Green jobs and businesses Small scale production and consumption (prosumers) Energy storage systems Upgrade evaporative cooling systems Grid reliability Energy efficiency in urban water management Urban green corridors Heated pools with waste heat from power plants Low and high enthalpy geothermal energy

APT D - Pathway <i>System Restructuring</i> high investment, high commitment to policy change This policy direction embraces a pre-emptive fundamental change at every level in order to completely transform the current social-ecological and economic systems	Short-term (up to 2030)	Mid-century (up to 2050)	End-century (up to 2100)
	Financial support for smart control of energy in houses and buildings Green jobs and businesses Energy storage systems Upgrade evaporative cooling systems Energy recovery microgrids Energy efficiency in urban water management Micro smart grids	Financial support for smart control of energy in houses and buildings Green jobs and businesses Energy storage systems Upgrade evaporative cooling systems Energy recovery microgrids Energy efficiency in urban water management Promote cogeneration	Financial support for smart control of energy in houses and buildings Green jobs and businesses Energy storage systems Upgrade evaporative cooling systems Energy recovery microgrids Energy efficiency in urban water management Low and high enthalpy geothermal energy

Vulnerability Reduction
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- **Financial support for smart control of energy in houses and buildings:** allows for an efficient and automated use of energy that enables savings and creates synergies with utilities. Adapting buildings at a controlled cost, while complying with mitigation goals.
- **Green jobs and businesses:** training people and supporting green businesses to implement energy solutions across the economy, both in mitigation and adaptation.
- **Public information service on climate action:** provide the general public with information about adaptation and mitigation options available for their activities and businesses.
- **Demand Side Management (DSM) of Energy:** an operational strategy that better coordinates producers and consumers of energy. More renewable energy use is possible while ensuring the energy service reliability and controlled costs.
- **Small scale production and consumption (prosumers):** to promote cooperation by creating economies of scale both in the production and consumption of energy. This allows for a greater use of local renewable resources and waste energy.
- **Collection and storage of forest fuel loads:** promote and regulate the collection and storage of wood and combustible material to reduce wildfire hazard. Materials collected can be used in energy to waste applications such as pellets, biogas or other energy solutions.
- **Energy storage systems:** provide an alternative when the main power sources fail and need time to recover. This allows for a more resilient energy grid while enabling decarbonization and peak levelling at a controlled cost.

- **Underground tubes and piping in urban planning:** used for space heating/cooling across the globe and are more resilient to climate change. These systems can be Earth Air Heat Exchanger (EAHE) and Ground Source Heat Pump (GSHP) types. Both systems use tubes or pipes that usually need to be buried beyond the footprint of the building or house.
- **Biomass power from household waste:** Biomass power plants burn household waste, waste from parks and public gardens and sludge generated by sewage treatment plants. Producing biomass for co-generation (Combine Heat and Power) as well as tri-generation (Combined Cold Heat and Power) plants.
- **Urban green corridors:** Urban green areas decrease the air temperature in a city and thus decrease energy needs. Creating green corridors also promotes biodiversity, increases the touristic value and decreases water run-off during storms.
- **Educational garden plots:** sites where people, especially children, can garden with volunteers one afternoon a week after school. This creates well-being while having local fresh produce reduces the energy consumption and pollution. These garden plots can be further exploring to educate people about other climate action measures.
- **Heated pools with waste heat from power plants:** Power plants need cooling and their waste heat can be used in swimming pools for public use and tourism; called Combined Heat and Power (CHP). Pools provide a heat sink for the power plants which increases efficiency and is useful during heat waves.

- **Review building codes of the energy infrastructure:** aims to climate-proof the energy system by reviewing regulatory codes and infrastructures considering the spatial distribution of climate risks.
- **Upgrade evaporative cooling systems:** Upgrade of evaporative cooling systems that rely on a given range of air temperature and water availability is necessary given that this type of cooling systems are a technology that can be affected by climate change and become compromised due to heat waves and water scarcity.
- **Grid reliability:** Grid reliability improvement aims to find and upgrade critical components and to enhance the energy system resilience to climate risks.
- **Energy recovery microgrids:** Energy recovery microgrids are operational elements of the energy grids that rely on distributed generation to restore systems from power outages and to stabilize the grid.

- **Hydrogen as energy vector:** using the renewable effluents for hydrogen production, the hydrogen could then be used after storage in high-pressure tanks as vehicle fuel, specially for heavy mobility.
- **Renewable technology hybridization:** hybridize more expensive technologies but with greater capacity to manage or provide ancillary services with less expensive but more unstable technologies. Balances the electrical system and guarantees quality supply.
- **Micro smart grids:** incentive providing greater resilience, since in the event of possible power failures in the electrical system, they will always have a guaranteed power supply. They serve to facilitate the penetration of the autogeneration REE in establishments, guaranteeing quality and security in the electrical supply.
- **Promote cogeneration:** to cover the deficit in self-consumption by installing conventional back-up groups in tourist establishments, to satisfy peaks in demand for various forms of energy (electricity + heat), through efficient generators powered by fossil fuels.
- **Low and high enthalpy geothermal energy:** Support for investment in research to determine whether the site is suitable for geothermal energy. The low enthalpy is very appreciated in air conditioning for its stability, and low cost in favorable circumstances. The high enthalpy gives stability to the electrical network.

- **Energy efficiency in urban water management:** is the adaptation of urban design and construction for water conservation that avoids energy use under scarcity scenarios. For instance, Water Sensitive Urban Design (WSUD) aims to plan water conservation and storm water storage with integration with elements of urban design.

