

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

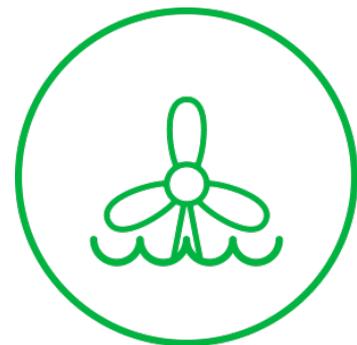
Click on the sector to see the specific recommendations 



TOURISM



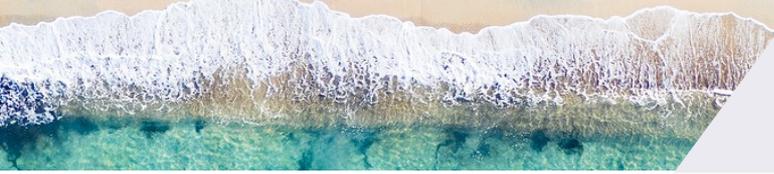
AQUACULTURE



ENERGY



**MARITIME
TRANSPORT**



APT A - Pathway Minimum Intervention low investment, low commitment to policy change This policy trajectory assumes a no-regrets strategy where the lowest cost adaptation policies are pursued to protect citizens from some climate impacts	Short-term (up to 2030)	Mid-century (up to 2050)	End-century (up to 2100)
	Activity and product diversification Drought and water conservation plans Fire management plans Post-Disaster recovery funds Monitoring, modelling and forecasting systems	Public awareness programmes Drought and water conservation plans Fire management plans Pre-disaster early recovery planning Monitoring, modelling and forecasting systems	Public awareness programmes Drought and water conservation plans Fire management plans Pre-disaster early recovery planning Monitoring, modelling and forecasting systems

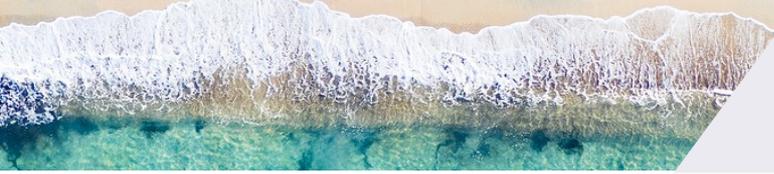
APT B - Pathway Economic Capacity Expansion high investment, low commitment to policy change This policy trajectory focuses primarily on encouraging climate-proof economic growth but does not seek to make significant changes to the current structure of the economy	Short-term (up to 2030)	Mid-century (up to 2050)	End-century (up to 2100)
	Economic Policy Instruments (EPIs) Public awareness programmes Beach nourishment Drought and water conservation plans Monitoring, modelling and forecasting systems River rehabilitation and restoration	Economic Policy Instruments (EPIs) Activity and product diversification Beach nourishment Drought and water conservation plans Monitoring, modelling and forecasting systems River rehabilitation and restoration	Economic Policy Instruments (EPIs) Activity and product diversification Desalination Drought and water conservation plans Monitoring, modelling and forecasting systems Dune restoration and rehabilitation

APT C - Pathway Efficiency Enhancement 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)
	Activity and product diversification Tourist awareness campaigns Water restrictions, consumption cuts and grey-water recycling Drought and water conservation plans Mainstreaming Disaster Risk Management Monitoring, modelling and forecasting systems River rehabilitation and restoration Adaptive management of natural habitats	Activity and product diversification Tourist awareness campaigns Water restrictions, consumption cuts and grey-water recycling Drought and water conservation plans Mainstreaming Disaster Risk Management Monitoring, modelling and forecasting systems River rehabilitation and restoration Adaptive management of natural habitats	Activity and product diversification Local circular economy Water restrictions, consumption cuts and grey-water recycling Drought and water conservation plans Mainstreaming Disaster Risk Management Monitoring, modelling and forecasting systems Dune restoration and rehabilitation Ocean pools

APT D - Pathway System Restructuring 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)
	Economic Policy Instruments (EPIs) Public awareness programmes Water restrictions, consumption cuts and grey-water recycling Coastal protection structures Post-Disaster recovery funds Monitoring, modelling and forecasting systems	Economic Policy Instruments (EPIs) Activity and product diversification Water restrictions, consumption cuts and grey-water recycling Drought and water conservation plans Pre-disaster early recovery planning Monitoring, modelling and forecasting systems	Economic Policy Instruments (EPIs) Activity and product diversification Local sustainable fishing Drought and water conservation plans Pre-disaster early recovery planning Monitoring, modelling and forecasting systems

Vulnerability Reduction
 Disaster Risk Reduction
 Socio-Ecological Resilience



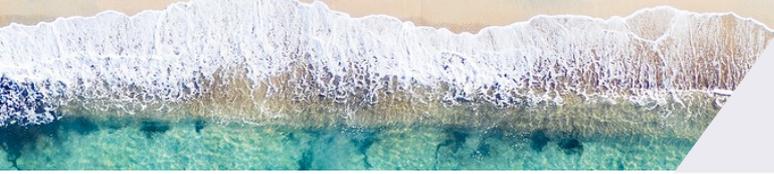


- **Activity and product diversification:** actions to diversify the tourism activities and products and aim to reduce seasonality and overload in infrastructures and ecosystems.
- **Public awareness programmes:** establish targeted programmes that raise awareness about climate change (specific values 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: pricing, environmental taxes, subsidies; trading; and voluntary agreements.
- **Beach nourishment:** artificial placement of sand to compensate for erosion. Maintaining beach width (for tourism and recreation).
- **Desalination:** 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.
- **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:** economic system aimed at eliminating waste and the continual use of resources for reduced carbon emissions from materials and increased resilience to climate change.
- **Water restrictions, consumption cuts and grey-water recycling:** Restrictions of certain uses of water to allow water administration services to cope with water crises. Grey-water recycling reuse to cover water use needs that don't demand such a high-quality.
- **Local sustainable fishing:** promotion of fishing zones/rights for local small-scale fishers maintaining stocks and using sustainable methods. Adding value to local resources and products, protect ecosystems services and decrease external dependency.

- **Drought and water conservation plans:** 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 damaging fires.
- **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.
- **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.
- **Coastal protection structures:** different types of artificial structures designed to protect the coast from sea level rise or storms.

- **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.
- **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.
- **Dune restoration and rehabilitation:** strengthening of the flood safety and sand reservoir functions of dunes. Erosion happens as a result of wind action, marine erosion, human activities and SLR.
- **Adaptive management of natural habitats:** preservation of ecosystem services which are essential for human well-being.
- **Ocean pools:** seawater pools located by the sea where waves can wash into the pool. These recreational structures are useful on SLR context, doubling as an additional protection of the coast and creating alternatives to beach leisure areas.





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	Awareness campaigns for behavioural change Risk-based zoning and site selection Contingency for emergency management, early harvest and/or relocation Recovery post-disaster plans Species selection	Efficient feed management Climate proof aquaculture activities Mainstreaming Disaster Risk Management Recovery post-disaster plans Species selection	Efficient feed management Risk-based zoning and site selection Mainstreaming Disaster Risk Management Recovery post-disaster funds Species selection

APT B - Pathway Economic Capacity Expansion 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 schemes, insurance and loans Awareness campaigns for behavioural change Recirculation Aquaculture Systems (RAS) Climate proof aquaculture activities Species selection Best Management Practices	Tax benefits and subsidies Awareness campaigns for behavioural change Recirculation Aquaculture Systems (RAS) Climate proof aquaculture activities Feed production Best Management Practices	Tax benefits and subsidies Efficient feed management Recirculation Aquaculture Systems (RAS) Risk-based zoning and site selection Feed production Best Management Practices

APT C - Pathway Efficiency Enhancement 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)
	Awareness campaigns for behavioural change Addressing consumer and environmental concerns at the local level Integrated multi-trophic aquaculture Climate proof aquaculture activities Environmental monitoring Early Warning Systems (EWS) Species selection Best Management Practices Create educational visits	Efficient feed management Addressing consumer and environmental concerns at the local level Integrated multi-trophic aquaculture Climate proof aquaculture activities Environmental monitoring Early Warning Systems (EWS) Species selection Best Management Practices Create educational visits	Awareness campaigns for behavioural change Addressing consumer and environmental concerns at the local level Integrated multi-trophic aquaculture Risk-based zoning and site selection Environmental monitoring Early Warning Systems (EWS) Species selection Best Management Practices Promote aquaculture cuisine

APT D - Pathway System Restructuring 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 schemes, insurance and loans Awareness campaigns for behavioural change Integrated multi-trophic aquaculture Climate proof aquaculture activities Recovery post-disaster plans Species selection	Tax benefits and subsidies Awareness campaigns for behavioural change Integrated multi-trophic aquaculture Climate proof aquaculture activities Recovery post-disaster funds Species selection	Tax benefits and subsidies Efficient feed management Integrated multi-trophic aquaculture Risk-based zoning and site selection Recovery post-disaster funds Feed production

Vulnerability Reduction
 Disaster Risk Reduction
 Socio-Ecological Resilience





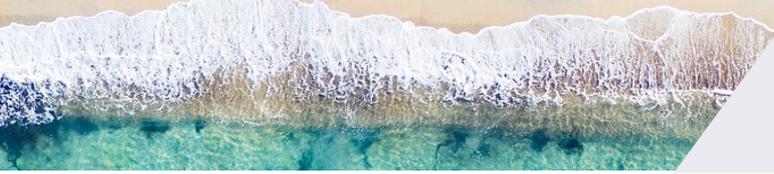
- **Awareness campaigns for behavioural change:** aim to increase the knowledge of individuals and organisations, it could also be relevant in a region affected by a particular climate threat, groups of stakeholders, and the general public.
- **Efficient feed management:** practices that reduce the Food Conversion Ratio by using technology to feed more efficient helps to reduce the cost of production and increase environmental standards.
- **Financial schemes, insurance and loans:** public or private risk-sharing mechanisms that aim to support farmers to respond to loss of production and infrastructures damages due to extreme weather.
- **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.
- **Recirculation Aquaculture Systems (RAS):** land-based indoor fish farms with closed containment rearing systems where filtration is applied to purify and regulate water parameters and remove toxic metabolic wastes of fish. Since it is land-based and indoor it limits the risk of infrastructure destruction due to extreme events in the ocean.
- **Addressing consumer and environmental concerns at the local level:** 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.
- **Integrated multi-trophic aquaculture:** an ecosystem-based approach to culture species from different trophic levels (fish, shellfish, seaweeds) in an integrated farm to create balanced systems for environmental sustainability. In addition, it can increase resilience.

- **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.
- **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.
- **Contingency for emergency management, early harvest and/or relocation:** moving activities to sites with more suitable characteristics to protect them against climate hazards (storms, high waves, temperature changes or water quality degradation).

- **Mainstreaming Disaster Risk Management:** plan and organize DRM considering climate change along five stages: prevention, protection, preparedness, and response, recovery and review in the aquaculture decision making and management frameworks.
- **Recovery post-disaster plans:** establish early recovery good practices and objectives. This option will allow to reduce socio-economic and environmental consequences of the disaster.
- **Recovery post-disaster funds:** create recovery funds and plans for Post-Disaster in Aquaculture with Initiatives to get the economy running quickly. This option minimizes the economic and social impacts that can occur in a post-disaster context.
- **Environmental monitoring Early Warning Systems (EWS):** systematically collect and provide information to fish farmers with the aim of supporting climate risk management. Monitoring and early warning facilitates adaptation actions: early harvesting or relocation of fish net pens from sites of intense harmful algae blooms.

- **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.
- **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.
- **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 the environment. These visits can also increase knowledge on different impacts on climate impacts.
- **Promote aquaculture cuisine:** promoting aquaculture species in restaurants will provide both a cultural experience and promote farmed products. 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.





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	Awareness campaigns for behavioural change Climate proof ports and port activities Intelligent Transport Systems (ITS) Post-Disaster recovery funds Combined protection and wave energy infrastructures	Social dialogue for training in the port sector Climate proof ports and port activities Intelligent Transport Systems (ITS) Backup routes and infrastructures during extreme weather Combined protection and wave energy infrastructures	Social dialogue for training in the port sector Climate proof ports and port activities Intelligent Transport Systems (ITS) Backup routes and infrastructures during extreme weather Marine life friendly coastal protection structures

APT B - Pathway Economic Capacity Expansion 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 incentives to retreat from high-risk areas Awareness campaigns for behavioural change Increase operational speed and flexibility in ports Climate proof ports and port activities Combined protection and wave energy infrastructures Coastal protection structures	Financial incentives to retreat from high-risk areas Social dialogue for training in the port sector Increase operational speed and flexibility in ports Climate proof ports and port activities Combined protection and wave energy infrastructures Hybrid and full electric ship propulsion	Insurance mechanisms for ports Social dialogue for training in the port sector Increase operational speed and flexibility in ports Consider expansion/retreat of ports in urban planning Marine life friendly coastal protection structures Hybrid and full electric ship propulsion

APT C - Pathway Efficiency Enhancement 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)
	Awareness campaigns for behavioural change Climate resilient economy and jobs Restrict development and settlement in low-lying areas Climate proof ports and port activities Reinforcement of inspection, repair and maintenance of infrastructures Combined protection and wave energy infrastructures Coastal protection structures Integrate ports in urban tissue	Social dialogue for training in the port sector Climate resilient economy and jobs Restrict development and settlement in low-lying areas Climate proof ports and port activities Early Warning Systems (EWS) and climate change monitoring Combined protection and wave energy infrastructures Coastal protection structures Integrate ports in urban tissue	Social dialogue for training in the port sector Climate resilient economy and jobs Restrict development and settlement in low-lying areas Consider expansion/retreat of ports in urban planning Early Warning Systems (EWS) and climate change monitoring Combined protection and wave energy infrastructures Hybrid and full electric ship propulsion Integrate ports in urban tissue

APT D - Pathway System Restructuring 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)
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Vulnerability Reduction
 Disaster Risk Reduction
 Socio-Ecological Resilience





- **Awareness campaigns for behavioural change:** increase individuals and organisations' knowledge about climate change and the risk faced by the maritime transport sector.
- **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.
- **Financial incentives to retreat from high-risk areas:** relocate settlements, infrastructure and activities from the original location due to their high exposure to flood, sea-level rise and storm surges.
- **Insurance mechanisms for ports:** risk-sharing schemes that aim to assist port operators in responding to the climate risks they are enabled to reduce. Insurance outsources the risks to a third party in exchange for a regular financial compensation.
- **Increase operational speed and flexibility in ports:** increase the attractiveness of ship transport in order to capture more freight and passenger movement. Faster operations also reduce the effects of heat waves on goods and people as well as decarbonise the economy.
- **Climate resilient economy and jobs:** to shift the economy and jobs towards a more climate resilient society. Perishable goods and some critical services rely heavily on the marine transport which can be affected by unpredictable extreme weather events.
- **Restrict development and settlement in low-lying areas:** assure that ports are not further developed in low-lying areas exposed to sea level rise. Planning must consider the long-term potential risks.

- **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.
- **Intelligent Transport Systems (ITS):** technologies that relay automated and tailored data and safety-related messages to ships, regarding climate hazards and other relevant information.
- **Post-Disaster recovery funds:** the creation of recovery funds for the maritime transport sector to recover after disasters, through initiatives that get the economy up and running quickly while building-back-better. The aim is to minimize the economic and social impacts that can occur in a post-disaster context.
- **Backup routes and infrastructures during extreme weather:** create a post disaster response that ensures available alternatives when the main ports are damaged or inaccessible due to extreme weather events. It considers alternative ports and access roads.
- **Consider expansion/retreat of ports in urban planning:** to consider the expansion or reallocation of areas for future maritime transport infrastructures due to climate change risks.
- **Reinforcement of inspection, repair and maintenance of infrastructure:** adapt monitoring to a new climate context. Changes in the frequency and/or intensity of storms, SLR or temperature, for example, may have impacts in infrastructure.
- **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.

- **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.
- **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.
- **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-lying areas while leisure and cultural activities can access more waterfront space.





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	Public information service on climate action Review building codes of the energy infrastructure Study and develop energy grid connections Energy recovery microgrids Energy efficiency in urban water management	Public information service on climate action Review building codes of the energy infrastructure Study and develop energy grid connections Local recovery energy outage capacity Energy efficiency in urban water management	Green jobs and businesses Review building codes of the energy infrastructure Study and develop energy grid connections Local recovery energy outage capacity Underground tubes and piping in urban planning

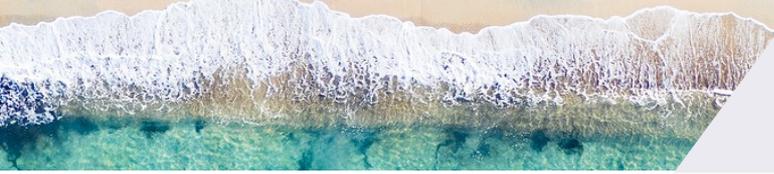
APT B - Pathway Economic Capacity Expansion high investment, low commitment to policy change This policy trajectory focuses primarily on encouraging climate-proof economic growth but does not seek to make significant changes to the current structure of the economy	Short-term (up to 2030)	Mid-century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

APT C - Pathway Efficiency Enhancement 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) Energy storage systems Upgrade evaporative cooling systems Early Warning Systems (EWS) Energy efficiency in urban water management Urban green corridors Educational garden plots	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 Biomass power from household waste Heated pools with waste heat from power plant	Green jobs and businesses Risk reporting platform Energy storage systems Review building codes of the energy infrastructure Grid reliability Underground tubes and piping in urban planning Biomass power from household waste Heated pools with waste heat from power plant

APT D - Pathway System Restructuring 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 buildings with low energy needs Green jobs and businesses Energy storage systems Upgrade evaporative cooling systems Energy recovery microgrids Energy efficiency in urban water management	Financial support for buildings with low energy needs Green jobs and businesses Collection and storage of forest fuel loads Upgrade evaporative cooling systems Energy recovery microgrids Underground tubes and piping in urban planning	Financial support for buildings with low energy needs Green jobs and businesses Energy storage systems Upgrade evaporative cooling systems Energy recovery microgrids Underground tubes and piping in urban planning

Vulnerability Reduction
 Disaster Risk Reduction
 Socio-Ecological Resilience





- **Public information service on climate action:** provide the general public with information about adaptation and mitigation options available for their activities and businesses.
- **Green jobs and businesses:** training people and supporting green businesses to implement energy solutions across the economy, both in mitigation and adaptation.
- **Financial support for buildings with low energy needs:** loans, subsidies or tax reliefs to support the reduction of energy needs of new or existing buildings. For example, construction materials that rely on passive thermal comfort.
- **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.
- **Risk reporting platform:** to promote the communication between the general public and the administration bodies concerning the risks related with climate change. It is a platform where the general public reports directly the risks as they become aware of.
- **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.
- **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.

- **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.
- **Study and develop energy grid connections:** develop interconnections between islands and/or with the mainland allowing for the creation of economies of scale, energy system reliability improvements and more Renewable Energy Sources penetration.
- **Energy recovery microgrids:** operational elements of the energy grids that rely on distributed generation to restore systems from power outages and to stabilize the grid.

- **Local recovery energy outage capacity:** increasing and improving the ability of the islands to recover from energy outages caused by or worsen by climate extreme events, like severe sea or windstorms that can lead to island isolation and exacerbate logistical hurdles.
- **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.
- **Early Warning Systems (EWS):** an information system that assesses climate risks and provides real time information to decision makers, companies, utilities and the general public. Using this data to monitor the evolution of climate related impacts increases the knowledge necessary to make long term climate adaptation decisions.
- **Grid reliability:** Grid reliability improvement aims to find and upgrade critical components and to enhance the energy system resilience to climate risks.

- **Energy efficiency in urban water management:** adaptation of urban design and construction for water conservation that avoids energy use under scarcity scenarios.
- **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.
- **Biomass power from household waste:** biomass power plants burn household waste, waste from parks and public gardens and sludge generated by sewage treatment 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.

