

CTCN Technology Taxonomy

CTCN Mitigation Sectors

Carbon Fixation and Abatement

Fugitive emission control

Oil and gas flaring reduction

Coal mine methane

Natural gas pipeline leaking

Charcoal production

Carbon capture and storage

CO2 transport technologies

CO2 storage technologies

CO2 capture technologies *

Transport

Inland water & maritime

Maritime freight

Maritime support systems

Land transport

Traffic management

More efficient heavy duty vehicles

More efficient light duty vehicles

Modal shift from car to cycling

Modal shift from private to public transportation

Modal shift from road to rail

Road pricing

Intelligent transport systems *

Scrappage programmes

Transport Demand Management

Freight management

More efficient train system

Transit-oriented development

Bus Rapid Transit

Cycle routes

Cable cars

Promotion of non-motorised transport

High-speed rail *

* =
filter
by
'innovation'

Sustainable urban mobility	Tram	
	Car sharing	*
Vehicle and fuel technologies	Compressed Natural Gas as fuel	
	Biogas as fuel	
	Advanced biofuels	*
	Liquefied Natural Gas in trucks and cars	
	Electric vehicles	
	Regenerative braking in trains	
	Liquefied Petroleum Gas in transport	
	Fuel cells for mobile applications	
	Hybrid electric vehicles	*
	Vehicle emission standards	
	Vehicle emission testing	
	Vehicle fuel subsidies	
Aviation	Aviation support systems	
	Air cargo	
Energy efficiency	Modal shift from air to rail	
Energy distribution	Hydrogen infrastructure	*
	District heating and cooling	
	Micro-grid	
	Smart grid	*
	Connection of isolated grid	
Appliances and equipment	Building efficiency appliances	
	Residential water heaters	
	LPG and LNG for household and commercial cooking	
	Lighting	
	Community-based energy services	
	Appliance standards	
	Efficient server and network technology	
	Improved cook stoves	
	Energy-efficient motors	
	Fuel cell technologies	*
	Efficient appliances	
	Water purification	

	Energy labelling	
	Water pumping	
	Efficient air conditioning systems	
	Heat pumps	
	Energy harvesting	*
	Energy Management Systems	
Buildings	Sustainable design	
	Daylight harnessing	
	New building design	
	Insulation in buildings	
	Building envelope thermal insulation	
	Building materials	
	Building life cycle and integrated design process	
	Building standards and codes	
	Greening the built environment	
	Retrofitting of existing buildings	
	Building automation	
	Building Energy Management Systems	
	Carbon sink and low-carbon building materials	*
	Heating - Ventilation and Air Conditioning	
	Design for Deconstruction	*
	High performance building facades	
	Passive house design	*
	Traditional building materials and design	
	Sustainable spatial planning	
	Cool roofs	
	Indirect evaporative cooling	
	Carbon accounting in buildings	
	Floor heating	
	Zero-energy building	*
Energy storage	Compressed air energy storage	
	Phase change materials for thermal energy storage	
	Capacitors	

Batteries
Pumped hydroelectric energy storage
Flywheels
Superconducting magnetic energy storage *
Underground thermal energy storage

Renewable energy

Solar

Solar cooking
Solar cooling and hybrid systems with heating and hot water
Solar towers (updraft) *
Solar water purification
Building-integrated PV
Solar water pumps
Solar heating
Solar lamps
Solar PV
Solar thermal power
Solar dryer
Energy tower (downdraft) *
Solar water heater
Concentrated solar power
Solar LED lights *

Renewable energy infrastructure

Hydrogen technologies
Off-grid systems
Fuel cells *
Fuel cells - stationary applications
Renewable energy resource mapping
Grid integration for renewables *
Hybrid renewable energy systems *
Feed-in tariff

Hydro

Large-scale hydropower
Small-scale hydropower
Run-of-river hydropower

Ocean energy

Osmotic power
Ocean thermal energy

conversion

Wave energy

Tidal energy

*

Wind

On-shore wind

Building-integrated wind turbines

Offshore wind

Wind water pumping

Small-scale wind

Bioenergy

Biofuels from algae

*

Switch from fossil fuel to biomass

Biodigester

Biogas for heating

Energy supply from waste

Biorefinery

Biogas power

Biomass briquettes or pellets

Biomass for heating

Black liquor

Biomass power

Ethanol fuel

Biodiesel

Biodiesel from waste oil

Charcoal production for cooking and heating

Household biogas

Biodiesel from waste oil

Geothermal

Geothermal electricity

Geothermal heating

Geothermal direct use application

Waste Management

Solid waste

Landfill aeration

Gasification of waste

Integrated solid waste management

Landfill biocovers

Landfill composting

Industrial solid waste

Municipal solid waste

Landfill gas power

		Incineration of waste	
		Landfill gas flaring	
		Landfill moisture management	
		Landfill mining	
		Bioreactor landfill	
	Recycling	Recycling of Waste Electronic and Electrical Equipment	
		Glass recycling	
		Advanced paper recycling	
		Product component and materials recycling	
	Wastewater	Wastewater management	
		Integrated wastewater management	
		Aerobic wastewater treatment	
		Wet composting	*
	Resource efficiency	Peer-to-peer lending platforms	*
		Product-as-service	*
		Valorisation of by-products and waste	
		Life cycle thinking	*
		Manufacturing on demand	
		Design for disassembly	*
		Waste prevention	
Forestry	Forest management for mitigation	Forest governance	
		Prevention of forest fires	
		Forest protection and conservation	
		Afforestation	
		Assisted natural regeneration	
		Reforestation	
		Forest plantation	
		Windbreaks	
	Forest carbon stock measurement		
Agriculture	Grassland management		
	Soil management	Restoration of organic soils	
		Restoration of degraded lands	
	Demand efficiency		

	Minimizing food waste
	Dietary changes
Cropland	
	Crop varieties with enhanced carbon sequestration
	Nutrient management: mycorrhiza
	N ₂ O reduction
	Organic agriculture
	Cropland management
	Machinery
	Mineral fertilisers
	Irrigation
	Rice cultivation - Intensification systems
	Rice cultivation - dry cultivation
	Rice cultivation
	CH ₄ reduction
	Organic agriculture
	Reduction of energy use in traction
	Field burning of agricultural residues
	Precision agriculture
	Conservation tillage
	Peat carbon management
	Biochar *
	Landscape multifunctionality
	Cover crop technology
	Manure coverage
	Crop drying
Wetland management	
Measurement of agricultural emissions	
	Soil carbon measurement
	Livestock emissions
	Cropland emissions
Improvement of Agri-food processes	
Livestock management	
	Manure management
	Selective breeding via controlled mating
	Methane emission mitigation of ruminants
	Straw ammoniation and silage
	Temperature regulation for

	livestock
	Enteric fermentation
	Livestock disease management
	Grazing land management
	Fodder banks
	Climate tolerant livestock
	Domestic manure
	Pasture management
	Livestock feed optimisation
	Biomass carbon measurement and monitoring
Industry	
	Mining & production
	Non-ferrous metals
	Reducing air and steam leaks
	Blast furnace slag granulation
	Direct casting for iron and steel sector
	Coke dry quenching for iron and steel sector
	Inert anode technology for aluminium smelters
	Iron & steel processing
	Aluminium industry
	Scrap preheating for iron and steel
	Improved efficiency in mining and resource extraction
	Smelt reduction for iron and steel sector
	Advanced wet quenching for iron and steel sector
	Fossil fuel shift
	Oil to electricity
	Oil to LPG
	Fossil fuels to natural gas
	New natural gas plant
	Fuel switch in industry
	Construction
	Efficient brick kiln
	Clinker replacement
	CCS from cement production *
	Cement production
	Cement heat
	Glass production
	Manufacturing industry

Machinery

Efficient supply chains

Mitigation in the textiles and leather industry

Industrial symbiosis *

Electronic control systems

Eco-design *

Wood products

Mitigation in the pulp and paper industry

Electronic devices

Bioplastics

Engine efficiency

Organic coating

Conventional power plant efficiency

Power plant rehabilitation

Stirling engine

Natural gas combined cycle plants

Integrated gasification combined-cycle

Single cycle to combined cycle power generation

Replacement of district heating boilers

Higher efficiency oil power

Higher efficiency steam boiler

Waste heat recovery

Trigeneration *

Small-scale combined heat and power

Large-scale combined heat and power

Chemicals management

N2O reduction

Shift to coolants and refrigerants with lower GWP

SF6 reduction

Adipic acid

Biopolymer production for petrochemical sector

CH4 reduction

CO2 replacement

CO2 recycling

PFCs reduction

Carbon black

Ammonia

Nitric acid
NF3 reduction

Transport of raw fuels

Coal transport
Biomass transport
Liquefaction plants
LNG and LPG carrier

CTCN Adaptation Sectors

Early Warning and Environmental Assessment

Remote sensing & GIS

Hazard mapping

Seasonal to interannual weather forecast

Vulnerability assessment tools

Disaster risk assessment tools *

Hazard mapping solutions

Drought risk mapping

Flood hazard mapping

Early warning systems & forecasting

Early Warning Systems Communication

Community-run early warning systems

Climate scenario development

Drought forecasting systems

Flood forecasting systems

Cyclone warning systems

Downscaling of climate model projections

Landslide and mudflow warning systems

Monitoring systems

Monitoring of invasive species

Climate change monitoring

Light detection and ranging

Ecosystem monitoring

Water resource assessment

Agriculture and Forestry

Forest management for adaptation

Reduced impact logging

Indigenous and multipurpose trees

Climate-resilient trees *

	Indigenous forest management practises	*
	Forest inventory	
	Forested catchments protection	
<u>Terrestrial ecosystems management</u>	Ecological corridors	
	Ecological buffer zones	
	Bushfire reduction and prescribed fire	
	Wetland restoration and rehabilitation	
	Control of sand encroachment	
	Biodiversity management systems	
	Forest fire control	
<u>Agro-forestry, Silviculture & Mixed farming</u>	General agro-forestry - silviculture and mixed farming solutions	
	Agroforestry	
<u>Seed, grain & food storage</u>	Crop storage	
	Ex situ conservation and seed banks	
	Food banks and distribution of food surplus	
<u>Increasing crop resilience and productivity</u>	Terracing	
	Integrated nutrient management	
	Soil moisture monitoring	
	Soilless agriculture	*
	Wind breaks	
	Greenhouse crop management	
	Fungal symbioses	
	Precision agriculture	
	Biochar technology	*
	Pest and insect control	
	Biotechnology for crop adaptation	
	Conservation tillage	
	Improved cultivation techniques	

Crop diversification and new varieties

Soil remediation techniques

Crop rotation

Crop insurance *

E-agriculture *

Drought-resistant crops

Livestock management

Manure management

Selective breeding via controlled mating

Straw ammoniation and silage

Temperature regulation for livestock

Enteric fermentation

Livestock disease management

Grazing land management

Fodder banks

Climate tolerant livestock

Pasture management

Livestock feed optimisation

Livestock insurance

Alternative sustainable feeds *

Land management training

Community-based agricultural extension

Forest user groups

Farmer field schools

Water

Water efficiency and demand management

Water efficiency in industry

Non-revenue water reduction

Leakage management in piped systems

Water accounting

Improved irrigation efficiency

Progressive water pricing

Water savings requirements in building codes

Public water conservation campaigns

Water licensing and permits

Multi-purpose dams

Wastewater irrigation

Drip irrigation

Water augmentation (increasing capture and storage of surface run-off)	Sprinkler irrigation
	Rainwater harvesting
	Rainwater harvesting ex situ
	Integration of green spaces in planning
	Watershed conservation
	Source water protection
Water treatment	Point of entry water treatment
	Point of use water treatment
	Flood-proof sanitary latrines
	Water purification systems
Riverine flood protection	River restoration
	Flow-through dam for flood control
	Artificial lowering of glacial lakes *
	Re-connecting rivers with floodplains
	Flood disaster preparedness plans
	Accommodation for flooding
	Flood proof wells
	Floodplain zoning
Urban storm water management	Canals and drainage systems
	Runoff control structures to temporarily store rainfall
	Permeable parking lots *
	Drainage gradient
	Designing protected areas
	Bioswales
Water conservation	Ponds and tanks
	Natural wetlands
	Water reservoirs
	Soil moisture conservation techniques
	Indigenous water storage structures
Alternative water sources	

	Seawater desalination	*
	Interbasin transfers	
	Solar water distillation	
	Water recycling and reclamation	
	Fog harvesting	*
Integrated planning	Integrated Water Resources Management	
	Water Safety Plans	
	Hydrological modelling	
	Groundwater extraction and monitoring	
Limiting nutrient leakage	Riparian buffers	
	Change in land use practices	
Water allocation	Seasonal water restrictions	
	Basin level modelling for water allocation	
	Water reallocation	
Human Health		
Emergency medical services		
Advanced IT systems in the health sector	Disease surveillance systems	
	E-Health	*
Public health services	Education of health personnel	
	Heat wave plans and emergency response	
	Air quality monitoring	
Vaccination programs		
Vector-borne diseases	Rapid diagnostic tests	
	Vector-borne disease prevention	
Healthcare equipment		
Infrastructure and Urban planning		
Ground surface material	Engineered cementitious composite (ECC)	
	Warm-mix asphalt	
Sewerage infrastructure		
Land use in human settlements		
Grid resiliency		

	Decentralized energy transmission
Building design and material	
	Green standards
	Disaster-resilient buildings
	Elevated buildings
Building construction	
Urban planning	
	Sustainable urban development
	Resilient sanitation infrastructure
Building codes	
Resilient transport systems	
	Resilient railway systems
	Resilient road systems
	Resilient port infrastructure
Coastal Zones	
Retreat	
	Coastal setbacks
	Managed realignment
Accommodation	
	Flood and cyclone shelters
	Floating houses *
	Management of seagrass beds
	Floating agricultural systems *
	Coastal zoning
Integrated coastal zone management	
	Sediment management
	Restoration and protection of coral reefs
	Coastal monitoring
	Ecosystem restoration and conservation plans
Protection (hard engineering)	
	Storm surge barriers and closure dams
	Breakwaters
	Jetties
	Dikes
	Sea walls
	Groynes
	Geosynthetics
	Coastal infrastructure rehabilitation

	Protection (soft engineering)	Revetments	
		Cliff stabilisation	
		Land claim	
		Beach nourishment	
		Constructed wetlands	
		Dune construction & stabilisation	
		Mangrove conservation and rehabilitation	
Marine and Fisheries	Active motion-dampening systems for marine ports		*
	Marine protected areas		
	Fisheries management	Protection of breeding areas	
		Sustainable fishing	
		Artisanal fishing	
		Fish farming	
		Discharge reduction	
		Regulations for abandoned fishing equipment	
	Artificial reefs		
	Marine monitoring		
Coss-sectoral Enablers and Approaches	Economics and financial decision-making	Green Public Procurement	
		Climate financing	
		Circular economy	
		Carbon tax	
		Carbon pricing	
		Disaster contingency funds	
		Microfinance	
		Climate insurance	*
	Communication and Awareness	Climate change awareness campaigns	
		Social media in disaster response	
		Early warning and forecasting systems	
		Public water conservation campaigns	
		Knowledge Management Systems	

	Community-run early warning systems
<u>Governance and Planning</u>	Technology Needs Assessment
	National Biodiversity Strategies and Action Plan
	National Adaptation Programmes of Action
<u>Capacity Building and Training</u>	
<u>Ecosystems and Biodiversity</u>	Ecosystem-based adaptation
	Payment for ecosystem services
<u>Gender</u>	Cash transfer policies
	Fuel subsidy reform
	Gender mainstreaming
	Sex-disaggregated data
	Women's economic empowerment
<u>Community based</u>	
<u>Disaster risk reduction</u>	
<u>Endogenous Technologies</u>	