Patent Classification Methodology for *The CO2 Question: Technical Progress and the Climate Crisis*

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1 Introduction

The Cooperative Patent Classification (CPC) system has more than 200,000 technology classes. Our objective is to identify technologies that address climate change and have the potential to reduce greenhouse gas emission. Specifically, we identify technologies that enable the substitution of emission-intensive technologies and technologies that improve the efficiency of fossil-fuel-based processes.

We compile relevant CPC classes from four existing source classifications and assign them two main final categories *pure green* and *fuel efficiency*.[1] A third, residual category labeled *unclassified*, covers technologies related to environmental protection, general resource or energy efficiency, climate adaptation, or indirect mitigation that cannot be assigned clearly to either of the two main final categories.

The assignment of individual CPC classes involved judgment, particularly where technologies serve multiple purposes or indirect links to emissions mitigation. We manually assigned each class to the final category that best matched the relevant definition, applying the definitions consistently while acknowledging that some alternative assignments may also be reasonable. The full list of classified CPC classes can be found in the accompanying CSV file, which matches the source classifications to the August 2021 CPC classification scheme.

Final category definitions:

Pure green: Technologies that substitute for emissions-intensive technologies, enable low- or zero-carbon systems, or directly avoid, capture, or remove greenhouse-gas emissions.

Fuel efficiency: Technologies that reduce fossil-fuel consumption or GHG emissions per unit of useful output while retaining a fossil-fuel-based process.

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[1] For clarity, we distinguish among CPC classes, source classifications, and final categories. A *CPC class* is an individual technology class identified by a code within the Cooperative Patent Classification hierarchy. A *source classification* is one of the four external classification frameworks—OECD, FF, IPC, or CK—used to identify potentially relevant CPC classes. A *final category* is one of the three analytical groups assigned in this study: *pure green*, *fuel efficiency*, or *unclassified*.

2 Underlying classification sources

The classification is based on four source classifications of environment-related technology classes:

1. Environmental technologies classified by the Organization of Economic Co-operation and Development (OECD): The search strategy is described by Hascic and Migotto (2015) and has a broad coverage including technologies related to environmental pollution, water scarcity and climate change mitigation. We use the 2020 version and call this the OECD source classification.

2. Efficiency improving fossil fuel technology classes: Lanzi, Verdolini, and Haščič (2011) search fuel-efficient technologies for electricity generation in fuel preparation technologies, furnaces and burners as well as boilers, turbines and engines. We call this the Fossil Fuel (FF) source classification.

3. International Patent Classification (IPC) Green Inventory[2]: This classification was developed by the IPC Committee of Experts and captures Environmentally Sound Technologies (ESTs), defined as "technologies that have the potential to significantly improved environmental performance relative to other technologies"[3]. We refer to this source as the IPC source classification.

4. Corporate Knights Clean 200 patents[4]: Corporate Knights identifies the top 200 companies based on the amount of revenue each company earns from products and services aligned with the Corporate Knights Clean Economy Taxonomy. We focus on the Corporate Knights Clean 200 firms for which at least 70% of their revenue was classified as clean. For these firms we collect their patents up to 5 years before the listing year. We then identify the CPC classes associated with this stock of patents. To identify technology classes related to greenhouse gas reduction, we review classes aggregated at the 5th, 7th and 8th level of the CPC hierarchy. We subsequently screen the most disaggregated available CPC classes using keywords[5] and manually assess whether a technology class is related to greenhouse-gas mitigation. We call this the Corporate Knights (CK) source classification.

3 Category classification procedure

We first clean and standardize each source classification — OECD, FF, IPC, and CK — and assign the revenant CPC classes to the three final categories *pure green*, *fuel efficiency* and *unclassified*.

For the OECD and IPC source classifications, we assign final categories at the most detailed level available within each source. For instance, OECD contains up to four levels. We therefore begin at the fourth level where available and otherwise proceed to the third, second and first level[6]. Within the most detailed OECD and IPC classifications, some CPC classes occur more than once or are listed at different points in the CPC hierarchy, including at the subclass, group, and subgroup levels. Where multiple assignments apply to the same CPC class, we use the assignment associated with the most specific applicable classification. The resulting OECD assignments are reported in Table 4. The IPC classification has up to 5 levels. While only

[2] WIPO-IPC green inventory source (accessed 2 February 2022)
[3] UN Environment Programme. Environmentally sound technologies. (accessed 12 March 2023)
[4] Corporate Knights. Clean 200 Top publicly listed companies by clean revenue (accessed 19 February 2022)
[5] Keywords include: solar, nuclear, water, wind, renewable, hydro, geothermal, fuel cell, greenhouse gas, efficiency, energy, hybrid, batter, fuel injection
[6] "2.1.1 Wind Energy" is an example classification where the lowest level is level 3. "9.2.1.1 Indoor water conservation" is an example classification that extends to level 4.

very few topics extend to level 5, we start with classifying the fifth level and move up[7]. We list the final categories assigned to the IPC classifications in Table 5.

All CPC classes from the Fossil Fuel classification are classified as "fuel efficiency technologies", subject to the exclusion checks described in the accompanying data file; see Table 6. Finally, for the Corporate Knights classification, we assign categories at the most appropriate aggregated CPC level. All more specific descendant classes are assumed to inherit the assignment of the identified parent class unless they receive a separate assignment. Table 7 reports the identified CPC classes, the level of the CPC class identified and an assigned OECD env-tech category, which we use to organize and present the CPC classes.

Next, we merge the four source classifications into a single master list. Because some CPC classes are covered by more than one source, the source combinations are not mutually exclusive (compare Table 1). Where a CPC class receives final category assignments from multiple sources, we apply the following precedence rule: OECD > FF > IPC > CK. The resulting assignments are matched to the August 2021 CPC classification scheme to produce the final list of CPC classes. The accompanying CSV file reports for each CPC class, the final category assignment in the variable `BKWclassification`, the assignments obtained from each of the four source classifications, and the relevant FF exclusion and OECD dual checks.

The CPC hierarchy contains up to 19 levels, although not every CPC classification path extends to level 19. Considering all CPC classes from level 5 onward, the August 2021 CPC scheme contains 260,212 classes. Considering only the lowest level within a given classification path, there are a total of 186,016 CPC classes. We identify 7,698 CPC classes as *pure green*, of which 5,297 are at the lowest level, and 6,631 classes as *fuel efficiency*, of which 4,629 are at the lowest level. A further 5,345 CPC classes, including 3,730 at the lowest level, are assigned to the residual *unclassified* category because they cannot be classified clearly as either *pure green* or *fuel efficiency*.

Table 1 reports the number of CPC classes covered by each source and combination of source classifications. Table 2 documents the number of CPC classes by final category and source classification. Lastly, Table 3 reports the distribution of source classifications within each final category. We derive most CPC classes for *pure green* technologies from IPC and for *fuel efficiency* technologies from FF.

To classify patents, we match the CPC classes to the CPC classes assigned to individual patents at the respective level. Because patents can have multiple CPC classes, a patent may be associated with CPC classes assigned to different final categories. If a patent is matched to multiple final categories, we classify it as *fuel efficiency* if it contains at least one CPC class assigned to the *fuel efficiency* final category. Otherwise, we classify the patent as *pure green* if it contains at least one CPC class assigned to the *pure green* final category. A patent containing only CPC classes assigned to *unclassified* remains in that residual final category.

[7] "Air quality management - treatment of waste gases - Combustion apparatus using recirculation of flue gases" is an example of a classification that goes down to level 5.

4 Tables

TABLE 1: CPC CLASSES BY SOURCE CLASSIFICATION

This table reports the number of CPC technology classes covered by each source classification or mutually exclusive combination of source classifications. OECD denotes the OECD environmental-technology classification, IPC the WIPO IPC Green Inventory, FF the fossil-fuel-efficiency classification, and CK the Corporate Knights classification. "All CPC classes (level 5 onward)" includes every CPC class at level 5 or below in the August 2021 CPC hierarchy. "Lowest CPC class only" includes only the most disaggregated class within each CPC classification path. Percentages are calculated relative to the total number of CPC classes in the respective column. "Not covered" indicates that the CPC class was not identified by any of the four source classifications. Percentages may not sum exactly to 100 because of rounding.

Source classification	All CPC classes (level 5 onward)		Lowest CPC class only	
	Count	Percentage	Count	Percentage
OECD	2198	0.84	1514	0.81
OECD & IPC	1830	0.7	1328	0.71
OECD & IPC & FF	127	0.05	89	0.05
OECD & FF	24	0.01	14	0.01
IPC	9404	3.61	6375	3.43
IPC & FF	774	0.3	552	0.3
FF	3459	1.33	2420	1.3
CK	1867	0.72	1365	0.73
Not covered	240529	92.44	172359	92.66

TABLE 2: CPC CLASSES BY FINAL CATEGORY AND SOURCE CLASSIFICATION

This table reports the number of CPC classes by final technology category and source classification. Final categories include the defined ones pure green, fuel-efficiency, and unclassified. Additionally, "Assigned at descendant level" indicates that a broader CPC class is not classified directly because more specific descendant classes receive the assignment and "Not covered" indicates that no source-specific classification was identified. Source classification include OECD, IPC, FF, and CK as well as mutually exclusive combination of source classifications. Percentages are calculated relative to the total number of CPC classes in the respective column. Percentages may not sum exactly to 100 because of rounding.

Final category	Source classification	All CPC classes (level 5 onward)		Lowest CPC class only	
		Count	Percentage	Count	Percentage
pure green	OECD	154	0.06	122	0.07
pure green	OECD & IPC	296	0.11	208	0.11
pure green	OECD & IPC & FF	1	0	1	0
pure green	IPC	6418	2.47	4352	2.34
pure green	CK	830	0.32	615	0.33
fuel efficiency	OECD	1601	0.62	1091	0.59
fuel efficiency	OECD & IPC	113	0.04	76	0.04
fuel efficiency	OECD & IPC & FF	126	0.05	88	0.05
fuel efficiency	OECD & FF	24	0.01	14	0.01
fuel efficiency	IPC	59	0.02	41	0.02
fuel efficiency	IPC & FF	774	0.3	552	0.3
fuel efficiency	FF	3459	1.33	2420	1.3
fuel efficiency	CK	475	0.18	347	0.19
unclassified	OECD	435	0.17	301	0.16
unclassified	OECD & IPC	1421	0.55	1044	0.56
unclassified	IPC	2927	1.12	1982	1.07
unclassified	CK	562	0.22	403	0.22
Assigned at descendant level	OECD	8	0	NA	NA
Not covered	Not covered	240529	92.44	172359	92.66

TABLE 3: DISTRIBUTION OF SOURCE CLASSIFICATIONS WITHIN FINAL CATEGORIES

This table reports the distribution of source classifications within each final technology category (pure-green, fuel-efficiency, and unclassified), using only the lowest CPC class in each classification path. Source abbreviations are OECD, IPC, FF, and CK; combined labels indicate coverage by multiple source classifications. For each final category, percentages are calculated relative to the total number of lowest-level CPC classes assigned to that category. Percentages therefore sum to 100 within each category, subject to rounding.

Source classification	Pure green		Fuel-efficiency		Unclassified	
	Count	Percentage	Count	Percentage	Count	Percentage
OECD	122	2.3	1091	23.57	301	8.07
OECD & IPC	208	3.93	76	1.64	1044	27.99
OECD & IPC & FF	1	0.02	88	1.9	0	0
OECD & FF	0	0	14	0.3	0	0
IPC	4352	82.14	41	0.89	1982	53.14
IPC & FF	0	0	552	11.92	0	0
FF	0	0	2420	52.28	0	0
CK	615	11.61	347	7.5	403	10.8

TABLE 4: FINAL CATEGORY ASSIGNMENT FOR THE OECD SOURCE CLASSIFICATION

Level	Topic L1	Topic L2	Topic L3	Topic L4	CPC codes	Category
3	1. Environmental Management	1.1. Air pollution abatement	1.1.1. Emissions abatement from stationary sources (e.g. SOx, NOx, PM emissions from combustion plants)		B01D53/34-965; F23G7/06; F23J15; F27B1/18	fuel efficiency
3					C21B7/22; C21C5/38; F23B80; F23C9	fuel efficiency
3					F23C10	fuel efficiency
3	1. Environmental Management	1.1. Air pollution abatement	1.1.2. Emissions abatement from mobile sources (e.g. NOx, CO, HC, PM emissions from motor vehicles)		B01D53/92; B01D53/94; B01D53/96; B01J23/38-468	fuel efficiency
3					F01M13; F01M2013; F02B47/08-10; F02D21/06-10	fuel efficiency
3					F02M26; F02M2026; G01M15/10; F02B47/06	fuel efficiency
3					F02D41; F02D43; F02D45; F02M3/02-055	fuel efficiency
3					F02M23; F02M25; F02M27; F02M31/02-186	fuel efficiency
3					F02M39-71; F02P5	fuel efficiency
3	1. Environmental Management	1.1. Air pollution abatement	1.1.3. Air pollution abatement - Not elsewhere classified		B01D46; B01D47; B01D49; B01D50	unclassified
3					B01D51; B03C3; F01N3; F01N5	unclassified
3					F01N13; F01N9; F01N11; C10L10/02	unclassified
3					C10L10/06	unclassified
3	1. Environmental Management	1.2. Water pollution abatement	1.2.1. Water and wastewater treatment		B63J4; C02F; C09K3/32; E03C1/12	unclassified
3					E03F	unclassified
3	1. Environmental Management	1.2. Water pollution abatement	1.2.2. Fertilizers from wastewater		C05F7	pure green
3	1. Environmental Management	1.2. Water pollution abatement	1.2.3. Oil spill and pollutant clean-up		E02B15/04-10; E02B2015/005; B63B35/32; C09K 3/32	fuel efficiency
3	1. Environmental Management	1.3. Waste management	1.3.1. Solid waste collection		E01H15; B65F	unclassified
3	1. Environmental Management	1.3. Waste management	1.3.2. Material recovery, recycling and re-use		A23K10/26-28; A23K10/32-33; A23K10/37-38; A43B1/12	pure green
3					B03B9/06; B22F8; B29B7/66; B29B17	pure green
3					B30B9/32; B62D67; B65H73; B65D65/46	pure green
3					C03B1/02; C04B7/24-30; C04B11/26; C04B18/04-305	pure green
3					C04B33/132; C08J11; C09K11/01; C10M175	pure green
3					C22B7; C22B19/28-30; C22B25/06; D01G11	pure green
3					D21B1/08-10; D21B1/32; D21C5/02; D21H17/01	pure green
3					H01B 15/00; H01J 9/52; H01M 6/52; H01M 10/54	pure green
3	1. Environmental Management	1.3. Waste management	1.3.3. Fertilizers from waste		C05F	pure green
3	1. Environmental Management	1.3. Waste management	1.3.4. Incineration and energy recovery		C10L5/46-48; F23G5; F23G7	unclassified
3	1. Environmental Management	1.3. Waste management	1.3.5. Landfilling		n.a.	unclassified
3	1. Environmental Management	1.3. Waste management	1.3.6. Waste management - Not elsewhere classified		B09B; C10G1/10; A61L11; B02C19/0075	unclassified
2	1. Environmental Management	1.4. Soil remediation			B09C	unclassified
2	1. Environmental Management	1.5. Environmental monitoring			F01N11; G08B21/12-14	unclassified
3	2. CCM technologies related to energy generation, transmission or distribution	2.1. Renewable energy generation	2.1.1. Wind energy		Y02E10/70-76	pure green
3	2. CCM technologies related to energy generation, transmission or distribution	2.1. Renewable energy generation	2.1.2. Solar thermal energy		Y02E10/40-47	pure green
3	2. CCM technologies related to energy generation, transmission or distribution	2.1. Renewable energy generation	2.1.3. Solar photovoltaic (PV) energy		Y02E10/50-56	pure green
3	2. CCM technologies related to energy generation, transmission or distribution	2.1. Renewable energy generation	2.1.4. Solar thermal-PV hybrids		Y02E10/60	pure green
3	2. CCM technologies related to energy generation, transmission or distribution	2.1. Renewable energy generation	2.1.5. Geothermal energy		Y02E10/10	pure green
3	2. CCM technologies related to energy generation, transmission or distribution	2.1. Renewable energy generation	2.1.6. Marine energy, e.g. using wave energy or salinity gradient		Y02E10/30	pure green
3	2. CCM technologies related to energy generation, transmission or distribution	2.1. Renewable energy generation	2.1.7. Hydro energy		Y02E10/20	pure green
3	2. CCM technologies related to energy generation, transmission or distribution	2.2. Energy generation from fuels of non-fossil origin	2.2.1. Biofuels, e.g. bio-diesel		Y02E50/10	pure green
3	2. CCM technologies related to energy generation, transmission or distribution	2.2. Energy generation from fuels of non-fossil origin	2.2.2. Fuel from waste, e.g. synthetic alcohol or diesel		Y02E50/30	pure green
3	2. CCM technologies related to energy generation, transmission or distribution	2.2. Energy generation from fuels of non-fossil origin	2.3.1. Technologies for improved output efficiency (combined heat and power, combined cycles, etc.)		Y02E20/12-18	fuel efficiency
3	2. CCM technologies related to energy generation, transmission or distribution	2.2. Energy generation from fuels of non-fossil origin	2.3.2. Technologies for improved input efficiency (efficient combustion or heat usage)		Y02E20/30-34	fuel efficiency
3	2. CCM technologies related to energy generation, transmission or distribution	2.4. Nuclear energy	2.4.1. Nuclear fusion reactors		Y02E30/10	pure green
3	2. CCM technologies related to energy generation, transmission or distribution	2.4. Nuclear energy	2.4.2. Nuclear fission reactors		Y02E30/30	pure green
3	2. CCM technologies related to energy generation, transmission or distribution	2.5. Technologies for an efficient electrical power generation, transmission or distribution	2.5.1. Superconducting electric elements or equipment		Y02E40/60	pure green
3	2. CCM technologies related to energy generation, transmission or distribution	2.5. Technologies for an efficient electrical power generation, transmission or distribution	2.5.2. Smart grids as CCM technology in the energy generation sector		Y02E40/70	pure green
3	2. CCM technologies related to energy generation, transmission or distribution	2.5. Technologies for an efficient electrical power generation, transmission or distribution	2.5.3. Not elsewhere classified		Y02E40/10-50	pure green
3	2. CCM technologies related to energy generation, transmission or distribution	2.6. Enabling Technologies (Technologies with potential or indirect contribution to GHG emission mitigation)	2.6.1. Energy storage		Y02E60/10-16	pure green
3	2. CCM technologies related to energy generation, transmission or distribution	2.6. Enabling Technologies (Technologies with potential or indirect contribution to GHG emission mitigation)	2.6.2. Hydrogen technology		Y02E60/30-36	unclassified
3	2. CCM technologies related to energy generation, transmission or distribution	2.6. Enabling Technologies (Technologies with potential or indirect contribution to GHG emission mitigation)	2.6.3. Fuel cells		Y02E60/50	pure green
3	2. CCM technologies related to energy generation, transmission or distribution	2.6. Enabling Technologies (Technologies with potential or indirect contribution to GHG emission mitigation)	2.6.4. High-voltage direct current transmission		Y02E60/60	unclassified
2	2. CCM technologies related to energy generation, transmission or distribution	2.7. Other energy conversion or management systems reducing GHG emissions			Y02E70	unclassified
1	3. Capture, storage, sequestration or disposal of GHG	3. Capture, storage, sequestration or disposal of GHG			Y02C	Assigned at descendant level
2	3. Capture, storage, sequestration or disposal of GHG	3.1. Capture or disposal of nitrous oxide (N2O)			Y02C20/10	pure green
2	3. Capture, storage, sequestration or disposal of GHG	3.2. Capture or disposal of methane (CH4)			Y02C20/20	pure green
2	3. Capture, storage, sequestration or disposal of GHG	3.3. Capture or disposal of perfluorocarbons [PFC], hydrofluorocarbons [HFC] or sulfur hexafluoride [SF6]			Y02C20/30	pure green
2	3. Capture, storage, sequestration or disposal of GHG	3.4. Capture or disposal of carbon dioxide (CO2)			Y02C20/40	pure green
1	4. CCM technologies related to transportation	4. CCM technologies related to transportation			Y02T	Assigned at descendant level
3	4. CCM technologies related to transportation	4.1. Road transport	4.1.1. Conventional vehicles (based on internal combustion engine)		Y02T10/10-40	fuel efficiency
3	4. CCM technologies related to transportation	4.1. Road transport	4.1.2. Hybrid vehicles		Y02T10/62	pure green
3	4. CCM technologies related to transportation	4.1. Road transport	4.1.3. Electric vehicles		Y02T10/64-72	pure green
3	4. CCM technologies related to transportation	4.1. Road transport	4.1.4. Fuel efficiency-improving vehicle design (common to all road vehicles)		Y02T10/80	unclassified
2	4. CCM technologies related to transportation	4.2. Rail Transport	4.2. RAIL Transport		Y02T30/00	unclassified
2	4. CCM technologies related to transportation	4.3. Aeronautics or air transport			Y02T50	unclassified
2	4. CCM technologies related to transportation	4.4. Maritime or waterways transport			Y02T70	unclassified
3	4. CCM technologies related to transportation	4.5. Enabling Technologies in transport	4.5.1. Electric vehicle charging		Y02T90/10-167	pure green
3	4. CCM technologies related to transportation	4.5. Enabling Technologies in transport	4.5.2. Application of hydrogen technology to transportation, e.g. using fuel cells		Y02T90/40	pure green
2	5. CCM technologies related to buildings	5.1. Integration of renewable energy sources in buildings			Y02B10	pure green
3	5. CCM technologies related to buildings	5.2. energy efficiency in buildings	5.2.1. Energy efficient lighting		Y02B20	unclassified
3	5. CCM technologies related to buildings	5.2. energy efficiency in buildings	5.2.2. Energy efficient heating, ventilation or air conditioning [HVAC]		Y02B30	unclassified
3	5. CCM technologies related to buildings	5.2. energy efficiency in buildings	5.2.3. Energy efficiency in home appliances		Y02B40	unclassified
3	5. CCM technologies related to buildings	5.2. energy efficiency in buildings	5.2.4. Energy efficient elevators, escalators and moving walkways, e.g. energy saving or recuperation technologies		Y02B50	unclassified
3	5. CCM technologies related to buildings	5.2. energy efficiency in buildings	5.2.5. End-user side		Y02B70	unclassified
2	5. CCM technologies related to buildings	5.3. Architectural or constructional elements improving the thermal performance of buildings			Y02B80	pure green
2	5. CCM technologies related to buildings	5.4. Enabling technologies in buildings			Y02B90	pure green
2	6. CCM technologies related to wastewater treatment or waste management	6.1. wastewater treatment			Y02W10	unclassified
3	6. CCM technologies related to wastewater treatment or waste management	6.2. Solid waste management	6.2.1. Waste collection, transportation, transfer or storage		Y02W30/10	unclassified
3	6. CCM technologies related to wastewater treatment or waste management	6.2. Solid waste management	6.2.2. Waste processing or separation		Y02W30/20	unclassified
3	6. CCM technologies related to wastewater treatment or waste management	6.2. Solid waste management	6.2.3. Landfill technologies aiming to mitigate methane emissions		Y02W30/30	unclassified
3	6. CCM technologies related to wastewater treatment or waste management	6.2. Solid waste management	6.2.4. Bio-organic fraction processing; Production of fertilisers from the organic fraction of waste or refuse		Y02W30/40	pure green
3	6. CCM technologies related to wastewater treatment or waste management	6.2. Solid waste management	6.2.5. Reuse, recycling or recovery technologies		Y02W30/50-91	pure green
2	6. CCM technologies related to wastewater treatment or waste management	6.3. Enabling technologies or technologies with a potential or indirect contribution to GHG mitigation			Y02W90	unclassified
3	7. CCM technologies in the production or processing of goods	7.1. Technologies related to metal processing	7.1.1. Reduction of GHG [GHG] emissions		Y02P10/10-146	fuel efficiency
3	7. CCM technologies in the production or processing of goods	7.1. Technologies related to metal processing	7.1.2. Process efficiency		Y02P10/20-32	unclassified
3	7. CCM technologies in the production or processing of goods	7.2. Technologies relating to the chemical industry	7.2.1. Process efficiency in chemical industry		Y02P20/10-133	unclassified
3	7. CCM technologies in the production or processing of goods	7.2. Technologies relating to the chemical industry	7.2.2. Feedstock		Y02P20/141-145	unclassified
3	7. CCM technologies in the production or processing of goods	7.2. Technologies relating to the chemical industry	7.2.3. Reduction of GHG [GHG] emissions, e.g. CO2		Y02P20/151-156	fuel efficiency
3	7. CCM technologies in the production or processing of goods	7.2. Technologies relating to the chemical industry	7.2.5. Improvements relating to adipic acid or caprolactam production		Y02P20/30	unclassified
3	7. CCM technologies in the production or processing of goods	7.2. Technologies relating to the chemical industry	7.2.6. Improvements relating to fluorochloro hydrocarbon, e.g. chlorodifluoromethane [HCFC-22] production		Y02P20/40	unclassified
3	7. CCM technologies in the production or processing of goods	7.3. Technologies relating to oil refining and petrochemical industry	7.3.1. Bio-feedstock		Y02P30/20	fuel efficiency
3	7. CCM technologies in the production or processing of goods	7.3. Technologies relating to oil refining and petrochemical industry	7.3.2. Ethylene production		Y02P30/40	fuel efficiency
3	7. CCM technologies in the production or processing of goods	7.4. Technologies relating to the processing of minerals	7.4.1. Production of cement		Y02P40/10-18	unclassified
3	7. CCM technologies in the production or processing of goods	7.4. Technologies relating to the processing of minerals	7.4.2. Production or processing of lime		Y02P40/40-45	unclassified
3	7. CCM technologies in the production or processing of goods	7.4. Technologies relating to the processing of minerals	7.4.3. Glass production		Y02P40/50-57	unclassified
3	7. CCM technologies in the production or processing of goods	7.4. Technologies relating to the processing of minerals	7.4.4. Production of ceramic materials or ceramic elements		Y02P40/60	unclassified
3	7. CCM technologies in the production or processing of goods	7.5. Technologies relating to agriculture, livestock or agroalimentary industries	7.5.1. Using renewable energies, e.g. solar water pumping		Y02P60/12	pure green
3	7. CCM technologies in the production or processing of goods	7.5. Technologies relating to agriculture, livestock or agroalimentary industries	7.5.2. Measures for saving energy, e.g. in green houses		Y02P60/14	unclassified
3	7. CCM technologies in the production or processing of goods	7.5. Technologies relating to agriculture, livestock or agroalimentary industries	7.5.3. Reduction of GHG [GHG] emissions in agriculture		Y02P60/20-22	unclassified
3	7. CCM technologies in the production or processing of goods	7.5. Technologies relating to agriculture, livestock or agroalimentary industries	7.5.4. Land use policy measures		Y02P60/30	unclassified

Level	Topic L1	Topic L2	Topic L3	Topic L4	CPC codes	Category
3	7. CCM technologies in the production or processing of goods	7.5. Technologies relating to agriculture, livestock or agroalimentary industries	7.5.5. Afforestation or reforestation		Y02P60/40	unclassified
3	7. CCM technologies in the production or processing of goods	7.5. Technologies relating to agriculture, livestock or agroalimentary industries	7.5.6. Livestock or poultry management		Y02P60/50-52	unclassified
3	7. CCM technologies in the production or processing of goods	7.5. Technologies relating to agriculture, livestock or agroalimentary industries	7.5.7. Fishing; Aquaculture; Aquafarming		Y02P60/60	unclassified
3	7. CCM technologies in the production or processing of goods	7.5. Technologies relating to agriculture, livestock or agroalimentary industries	7.5.8. Food processing, e.g. use of renewable energies or variable speed drives in handling, conveying or stacking		Y02P60/80-87	unclassified
2	7. CCM technologies in the production or processing of goods	7.6. technologies in the production process for final industrial or consumer products			Y02P70	unclassified
2	7. CCM technologies in the production or processing of goods	7.7. CCM technologies for sector-wide applications			Y02P80	unclassified
2	7. CCM technologies in the production or processing of goods	7.8. Enabling technologies with a potential contribution to GHG emissions mitigation			Y02P90	unclassified
2	8. CCM in information and communication technologies	8.1. Energy efficient computing			Y02D10	unclassified
2	8. CCM in information and communication technologies	8.2. Energy efficiency in communication networks			Y02D30	unclassified
3	9. Climate change adaption technologies	9.1. Adaptation at coastal zones or river basins	9.1.1. Hard structures, e.g. dams, dykes or breakwaters		Y02A10/11	unclassified
3	9. Climate change adaption technologies	9.1. Adaptation at coastal zones or river basins	9.1.2. Dune restoration or creation; cliff stabilisation		Y02A10/23	unclassified
3	9. Climate change adaption technologies	9.1. Adaptation at coastal zones or river basins	9.1.3. Artificial reefs or seaweed; restoration or protection of coral reefs		Y02A10/26	unclassified
3	9. Climate change adaption technologies	9.1. Adaptation at coastal zones or river basins	9.1.4. Flood prevention; flood or storm water management		Y02A10/30	unclassified
3	9. Climate change adaption technologies	9.1. Adaptation at coastal zones or river basins	9.1.5. Controlling, monitoring or forecasting		Y02A10/40	unclassified
4	9. Climate change adaption technologies	9.2. Water resource management	9.2.1. Demand-side technologies (water conservation)	9.2.1.1. Indoor water conservation	F16K21/06-12; F16K 21/16-20; F16L55/07; E03C1/084	unclassified
4					E03D3/12; E03D1/14; A47K11/12; A47K11/02	unclassified
4					E03D13/007; E03D5/016; E03B1/041; Y02A20/146-148	unclassified
4	9. Climate change adaption technologies	9.2. Water resource management	9.2.1. Demand-side technologies (water conservation)	9.2.1.2. Irrigation water conservation	A01G25/02; A01G25/06; A01G 25/16; C12N15/8273	unclassified
4	9. Climate change adaption technologies	9.2. Water resource management	9.2.1. Demand-side technologies (water conservation)	9.2.1.3. Water conservation in thermoelectric power production	F01K23/06-108; F01D11; Y02A20/30	fuel efficiency
4	9. Climate change adaption technologies	9.2. Water resource management	9.2.2. Supply-side technologies (water availability)	9.2.2.1. Water collection (rain, surface and ground-water)	E03B3/02; E03B3/03; Y02A20/108; E03B9	unclassified
4					E03B3/04; E03B3/30; E03B3/36; E03B5	unclassified
4					E03B3/06-26; E03B3/28; E03B3/32-34; E03B3/38-40	unclassified
4	9. Climate change adaption technologies	9.2. Water resource management	9.2.2. Supply-side technologies (water availability)	9.2.2.2. Water desalination	Y02A20/124-144; C02F1/265	unclassified
4	9. Climate change adaption technologies	9.2. Water resource management	9.2.2. Supply-side technologies (water availability)	9.2.2.3. Water storage and distribution	E03B11; Y02A20/15	unclassified
4					[F17D5/02; F16L55/16; G01M3/08] and [E03B; E03C; E03D]	unclassified
4					[G01M3/14; G01M3/18; G01M3/22; G01M3/28] and [E03B; E03C; E03D]	unclassified
4	9. Climate change adaption technologies	9.2. Water resource management	9.2.2. Supply-side technologies (water availability)	9.2.2.4. Water filtration; Water and wastewater treatment	Y02A20/152; Y02A20/20-212	unclassified
4	9. Climate change adaption technologies	9.2. Water resource management	9.2.2. Supply-side technologies (water availability)	9.2.2.5. Protecting water resources	Y02A20/40-411	unclassified
3	9. Climate change adaption technologies	9.3. Adapting or protecting infrastructure or their operation	9.3.1. Extreme weather resilient electric power supply systems		Y02A30/14	unclassified
3	9. Climate change adaption technologies	9.3. Adapting or protecting infrastructure or their operation	9.3.2. Structural elements or technology for improving thermal insulation		Y02A30/24-254	unclassified
3	9. Climate change adaption technologies	9.3. Adapting or protecting infrastructure or their operation	9.3.3. Relating to heating, ventilation or air conditioning [HVAC] technologies		Y02A30/27-274	unclassified
3	9. Climate change adaption technologies	9.3. Adapting or protecting infrastructure or their operation	9.3.4. In transportation		Y02A30/30	unclassified
3	9. Climate change adaption technologies	9.3. Adapting or protecting infrastructure or their operation	9.3.5. Planning or developing urban green infrastructure		Y02A30/60	unclassified
3	9. Climate change adaption technologies	9.4. Adaption technologies in agriculture, forestry, livestock or agroalimentary production	9.4.1. In agriculture		Y02A40/10-58	unclassified
3	9. Climate change adaption technologies	9.4. Adaption technologies in agriculture, forestry, livestock or agroalimentary production	9.4.2. Ecological corridors or buffer zones		Y02A40/60	unclassified
3	9. Climate change adaption technologies	9.4. Adaption technologies in agriculture, forestry, livestock or agroalimentary production	9.4.3. In livestock or poultry		Y02A40/70-76	unclassified
3	9. Climate change adaption technologies	9.4. Adaption technologies in agriculture, forestry, livestock or agroalimentary production	9.4.4. In fisheries management		Y02A40/80-818	unclassified
3	9. Climate change adaption technologies	9.4. Adaption technologies in agriculture, forestry, livestock or agroalimentary production	9.4.5. In food processing or handling, e.g. food conservation		Y02A40/90-966	unclassified
3	9. Climate change adaption technologies	9.5. Adaptation technologies in human health protection, e.g. against extreme weather	9.5.1. Air quality improvement or preservation		Y02A50/20-2351	unclassified
3	9. Climate change adaption technologies	9.5. Adaptation technologies in human health protection, e.g. against extreme weather	9.5.2. Against vector-borne diseases whose impact is exacerbated by climate change		Y02A50/30	unclassified
3	9. Climate change adaption technologies	9.6. Technologies having an indirect contribution to adaption to climate change	9.6.1. Information and communication technologies [ICT] supporting adaptation to climate change, e.g. for weather forecasting or climate simulation		Y02A90/10	unclassified
3	9. Climate change adaption technologies	9.6. Technologies having an indirect contribution to adaption to climate change	9.6.2. Assessment of water resources		Y02A90/30	unclassified
3	9. Climate change adaption technologies	9.6. Technologies having an indirect contribution to adaption to climate change	9.6.3. Monitoring or fighting invasive species		Y02A90/40	unclassified
3	10. Ocean Economy	10.1 Ocean renewable energy generation	10.1.2. Offshore solar energy		B63B 2035/4453	pure green
3	10. Ocean Economy	10.1 Ocean renewable energy generation	10.1.3. Tide, wave, current and other marine energy		E02B 9/08; F03B 13/12-268; B63B 2035/4466; Y02E 10/30	pure green
3					F03G 7/05	pure green
3	10. Ocean Economy	10.2. Ocean pollution abatement	10.2.1. Ballast water treatment		C02F 2103/008; B63J 4/002-006; B63B13	unclassified
3	10. Ocean Economy	10.2. Ocean pollution abatement	10.2.2. Oil spill (and other floating debris) prevention and cleanup		B63B 25/082; B63B 17/0036; B63B 27/34; B63B 35/32	fuel efficiency
3					C09K 3/32; E21B 43/0122; E02B 15/04-108; Y02A 20/204	fuel efficiency
3	10. Ocean Economy	10.3. Climate change mitigatoin in maritime transport	10.3.1. Improved vessel design		Y02T 70/10	unclassified
3	10. Ocean Economy	10.3. Climate change mitigatoin in maritime transport	10.3.2. Fuel-efficient propulsion or fuel substitution		Y02T 70/50-5236	fuel efficiency
2	10. Ocean Economy	10.4. CCM & adaption in fishing, aquaculture and aquafarming			Y02F 60/60; Y02A 40/80-818	unclassified
2	10. Ocean Economy	10.5. Desalination of sea water		10.5. desalination of SEA water	Y02A 20/124-144; C02F 1/265	pure green
2	10. Ocean Economy	10.6. Climate change adaption in coastal zones			Y02A 10/00-40; Y02A 20/404; Y02A 30/14	unclassified

TABLE 5: FINAL CATEGORY ASSIGNMENT FOR THE IPC SOURCE CLASSIFICATION

Level	Topic L1	Topic L2	Topic L3	Topic L4	Topic L5	IPC codes	Category
3	ALTERNATIVE ENERGY PRODUCTION	BIO-FUELS	SOLID FUELS			C10L 5/00, 5/40-5/48	pure green
4	ALTERNATIVE ENERGY PRODUCTION	BIO-FUELS	SOLID FUELS	TORREFACTION OF BIOMASS		C10B 53/02	pure green
4	ALTERNATIVE ENERGY PRODUCTION	BIO-FUELS	SOLID FUELS	TORREFACTION OF BIOMASS		C10L 5/40, 9/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	BIO-FUELS	LIQUID FUELS			C10L 1/00, 1/02, 1/14	pure green
4	ALTERNATIVE ENERGY PRODUCTION	BIO-FUELS	LIQUID FUELS	VEGETABLE OILS		C10L 1/02, 1/19	pure green
4	ALTERNATIVE ENERGY PRODUCTION	BIO-FUELS	LIQUID FUELS	BIODIESEL		C07C 67/00, 69/00	pure green
4	ALTERNATIVE ENERGY PRODUCTION	BIO-FUELS	LIQUID FUELS	BIODIESEL		C10G	pure green
4	ALTERNATIVE ENERGY PRODUCTION	BIO-FUELS	LIQUID FUELS	BIODIESEL		C10L 1/02, 1/19	pure green
4	ALTERNATIVE ENERGY PRODUCTION	BIO-FUELS	LIQUID FUELS	BIODIESEL		C11C 3/10	pure green
4	ALTERNATIVE ENERGY PRODUCTION	BIO-FUELS	LIQUID FUELS	BIODIESEL		C12P 7/649	pure green
4	ALTERNATIVE ENERGY PRODUCTION	BIO-FUELS	LIQUID FUELS	BIOETHANOL		C10L 1/02, 1/182	pure green
4	ALTERNATIVE ENERGY PRODUCTION	BIO-FUELS	LIQUID FUELS	BIOETHANOL		C12N 9/24	pure green
4	ALTERNATIVE ENERGY PRODUCTION	BIO-FUELS	LIQUID FUELS	BIOETHANOL		C12P 7/06-7/14	pure green
3	ALTERNATIVE ENERGY PRODUCTION	BIO-FUELS	BIOGAS			C02F 3/28, 11/04	pure green
3	ALTERNATIVE ENERGY PRODUCTION	BIO-FUELS	BIOGAS			C10L 3/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	BIO-FUELS	BIOGAS			C12M 1/107	pure green
3	ALTERNATIVE ENERGY PRODUCTION	BIO-FUELS	BIOGAS			C12P 5/02	pure green
3	ALTERNATIVE ENERGY PRODUCTION	BIO-FUELS	FROM GENETICALLY ENGINEERED ORGANISMS			C12N 1/13, 1/15, 1/21, 5/10, 15/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	BIO-FUELS	FROM GENETICALLY ENGINEERED ORGANISMS			A01H	pure green
2	ALTERNATIVE ENERGY PRODUCTION	INTEGRATED GASIFICATION COMBINED CYCLE (IGCC)				C10L 3/00	fuel efficiency
2	ALTERNATIVE ENERGY PRODUCTION	INTEGRATED GASIFICATION COMBINED CYCLE (IGCC)				F02C 3/28	fuel efficiency
2	ALTERNATIVE ENERGY PRODUCTION	FUEL CELLS				H01M 4/86-4/98, 8/00-8/24, 12/00-12/08	pure green
3	ALTERNATIVE ENERGY PRODUCTION	FUEL CELLS	ELECTRODES			H01M 4/86-4/98	pure green
4	ALTERNATIVE ENERGY PRODUCTION	FUEL CELLS	ELECTRODES	INERT ELECTRODES WITH CATALYTIC ACTIVITY		H01M 4/86-4/98	pure green
3	ALTERNATIVE ENERGY PRODUCTION	FUEL CELLS	NON-ACTIVE PARTS			H01M 8/00-8/24, 50/00-50/171	pure green
3	ALTERNATIVE ENERGY PRODUCTION	FUEL CELLS	WITHIN HYBRID CELLS			H01M 12/00-12/08	pure green
2	ALTERNATIVE ENERGY PRODUCTION	PYROLYSIS OR GASIFICATION OF BIOMASS				C10B 53/00	pure green
2	ALTERNATIVE ENERGY PRODUCTION	PYROLYSIS OR GASIFICATION OF BIOMASS				C10J	pure green
3	ALTERNATIVE ENERGY PRODUCTION	HARNESSING ENERGY FROM MANMADE WASTE	AGRICULTURAL WASTE			C10L 5/00	pure green
4	ALTERNATIVE ENERGY PRODUCTION	HARNESSING ENERGY FROM MANMADE WASTE	AGRICULTURAL WASTE	FUEL FROM ANIMAL WASTE AND CROP RESIDUES		C10L 5/42, 5/44	pure green
4	ALTERNATIVE ENERGY PRODUCTION	HARNESSING ENERGY FROM MANMADE WASTE	AGRICULTURAL WASTE	INCINERATORS FOR FIELD, GARDEN OR WOOD WASTE		F23G 7/00, 7/10	pure green
3	ALTERNATIVE ENERGY PRODUCTION	HARNESSING ENERGY FROM MANMADE WASTE	GASIFICATION			C10J 3/02, 3/46	fuel efficiency
3	ALTERNATIVE ENERGY PRODUCTION	HARNESSING ENERGY FROM MANMADE WASTE	GASIFICATION			F23B 90/00	fuel efficiency
3	ALTERNATIVE ENERGY PRODUCTION	HARNESSING ENERGY FROM MANMADE WASTE	GASIFICATION			F23G 5/027	fuel efficiency
3	ALTERNATIVE ENERGY PRODUCTION	HARNESSING ENERGY FROM MANMADE WASTE	CHEMICAL WASTE			B09B 3/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	HARNESSING ENERGY FROM MANMADE WASTE	CHEMICAL WASTE			F23G 7/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	HARNESSING ENERGY FROM MANMADE WASTE	INDUSTRIAL WASTE			C10L 5/48	pure green
3	ALTERNATIVE ENERGY PRODUCTION	HARNESSING ENERGY FROM MANMADE WASTE	INDUSTRIAL WASTE			F23G 5/00, 7/00	pure green
4	ALTERNATIVE ENERGY PRODUCTION	HARNESSING ENERGY FROM MANMADE WASTE	INDUSTRIAL WASTE	USING TOP GAS IN BLAST FURNACES TO POWER PIG-IRON PRODUCTION		C21B 5/06	fuel efficiency
4	ALTERNATIVE ENERGY PRODUCTION	HARNESSING ENERGY FROM MANMADE WASTE	INDUSTRIAL WASTE	PULP LIQUORS		D21C 11/00	pure green
4	ALTERNATIVE ENERGY PRODUCTION	HARNESSING ENERGY FROM MANMADE WASTE	INDUSTRIAL WASTE	ANAEROBIC DIGESTION OF INDUSTRIAL WASTE		A62D 3/02	pure green
4	ALTERNATIVE ENERGY PRODUCTION	HARNESSING ENERGY FROM MANMADE WASTE	INDUSTRIAL WASTE	ANAEROBIC DIGESTION OF INDUSTRIAL WASTE		C02F 11/04, 11/14	pure green
4	ALTERNATIVE ENERGY PRODUCTION	HARNESSING ENERGY FROM MANMADE WASTE	INDUSTRIAL WASTE	INDUSTRIAL WOOD WASTE		F23G 7/00, 7/10	pure green
3	ALTERNATIVE ENERGY PRODUCTION	HARNESSING ENERGY FROM MANMADE WASTE	HOSPITAL WASTE			B09B 3/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	HARNESSING ENERGY FROM MANMADE WASTE	HOSPITAL WASTE			F23G 5/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	HARNESSING ENERGY FROM MANMADE WASTE	LANDFILL GAS			B09B	fuel efficiency
4	ALTERNATIVE ENERGY PRODUCTION	HARNESSING ENERGY FROM MANMADE WASTE	LANDFILL GAS	SEPARATION OF COMPONENTS		B01D 53/02, 53/04, 53/047, 53/14, 53/22, 53/24	fuel efficiency
3	ALTERNATIVE ENERGY PRODUCTION	HARNESSING ENERGY FROM MANMADE WASTE	MUNICIPAL WASTE			C10L 5/46	pure green
3	ALTERNATIVE ENERGY PRODUCTION	HARNESSING ENERGY FROM MANMADE WASTE	MUNICIPAL WASTE			F23G 5/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	HYDRO ENERGY	WATER-POWER PLANTS			E02B 9/00-9/06	pure green
4	ALTERNATIVE ENERGY PRODUCTION	HYDRO ENERGY	WATER-POWER PLANTS	TIDE OR WAVE POWER PLANTS		E02B 9/08	pure green
3	ALTERNATIVE ENERGY PRODUCTION	HYDRO ENERGY	MACHINES OR ENGINES FOR LIQUIDS			F03B	pure green
3	ALTERNATIVE ENERGY PRODUCTION	HYDRO ENERGY	MACHINES OR ENGINES FOR LIQUIDS			F03C	pure green
4	ALTERNATIVE ENERGY PRODUCTION	HYDRO ENERGY	MACHINES OR ENGINES FOR LIQUIDS	USING WAVE OR TIDE ENERGY		F03B 13/12-13/26	pure green
3	ALTERNATIVE ENERGY PRODUCTION	HYDRO ENERGY	REGULATING, CONTROLLING OR SAFETY MEANS OF MACHINES OR ENGINES			F03B 15/00-15/22	pure green
3	ALTERNATIVE ENERGY PRODUCTION	HYDRO ENERGY	PROPULSION OF MARINE VESSELS USING ENERGY DERIVED FROM WATER MOVEMENT			B63H 19/02, 19/04	pure green
2	ALTERNATIVE ENERGY PRODUCTION	OCEAN THERMAL ENERGY CONVERSION (OTEC)				F03G 7/05	pure green
2	ALTERNATIVE ENERGY PRODUCTION	WIND ENERGY				F03D	pure green
3	ALTERNATIVE ENERGY PRODUCTION	WIND ENERGY	STRUCTURAL ASSOCIATION OF ELECTRIC GENERATOR WITH MECHANICAL DRIVING MOTOR			H02K 7/18	pure green
3	ALTERNATIVE ENERGY PRODUCTION	WIND ENERGY	STRUCTURAL ASPECTS OF WIND TURBINES			B63B 35/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	WIND ENERGY	STRUCTURAL ASPECTS OF WIND TURBINES			E04H 12/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	WIND ENERGY	STRUCTURAL ASPECTS OF WIND TURBINES			F03D 13/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	WIND ENERGY	PROPULSION OF VEHICLES USING WIND POWER			B60K 16/00	pure green
4	ALTERNATIVE ENERGY PRODUCTION	WIND ENERGY	PROPULSION OF VEHICLES USING WIND POWER	ELECTRIC PROPULSION OF VEHICLES USING WIND POWER		B60L 8/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	WIND ENERGY	PROPULSION OF MARINE VESSELS BY WIND-POWERED MOTORS			B63H 13/00	pure green
2	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY				F24S	pure green
2	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY				H02S	pure green
4	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	PHOTOVOLTAICS (PV)	DEVICES ADAPTED FOR THE CONVERSION OF RADIATION ENERGY INTO ELECTRICAL ENERGY		H01L 27/142, 31/00-31/078	pure green
4	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	PHOTOVOLTAICS (PV)	DEVICES ADAPTED FOR THE CONVERSION OF RADIATION ENERGY INTO ELECTRICAL ENERGY		H01G 9/20	pure green
4	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	PHOTOVOLTAICS (PV)	DEVICES ADAPTED FOR THE CONVERSION OF RADIATION ENERGY INTO ELECTRICAL ENERGY		H02S 10/00	pure green
5	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	PHOTOVOLTAICS (PV)	DEVICES ADAPTED FOR THE CONVERSION OF RADIATION ENERGY INTO ELECTRICAL ENERGY	USING ORGANIC MATERIALS AS THE ACTIVE PART	H01L 27/30, 51/42-51/48	pure green
4	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	PHOTOVOLTAICS (PV)	ASSEMBLIES OF A PLURALITY OF SOLAR CELLS		H01L 25/00, 25/03, 25/16, 25/18, 31/042	pure green
4	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	PHOTOVOLTAICS (PV)	SILICON; SINGLE-CRYSTAL GROWTH		C01B 33/02	pure green
4	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	PHOTOVOLTAICS (PV)	SILICON; SINGLE-CRYSTAL GROWTH		C23C 14/14, 16/24	pure green
4	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	PHOTOVOLTAICS (PV)	SILICON; SINGLE-CRYSTAL GROWTH		C30B 29/06	pure green
4	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	PHOTOVOLTAICS (PV)	REGULATING TO THE MAXIMUM POWER AVAILABLE FROM SOLAR CELLS		G05F 1/67	pure green
4	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	PHOTOVOLTAICS (PV)	ELECTRIC LIGHTING DEVICES WITH, OR RECHARGEABLE WITH, SOLAR CELLS		F21L 4/00	pure green
4	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	PHOTOVOLTAICS (PV)	ELECTRIC LIGHTING DEVICES WITH, OR RECHARGEABLE WITH, SOLAR CELLS		F21S 9/03	pure green
4	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	PHOTOVOLTAICS (PV)	CHARGING BATTERIES		H02J 7/35	pure green
4	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	PHOTOVOLTAICS (PV)	DYE-SENSITISED SOLAR CELLS (DSSC)		H01G 9/20	pure green
4	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	PHOTOVOLTAICS (PV)	DYE-SENSITISED SOLAR CELLS (DSSC)		H01M 14/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	USE OF SOLAR HEAT			F24S	pure green
4	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	USE OF SOLAR HEAT	FOR DOMESTIC HOT WATER SYSTEMS		F24D 17/00, 18/00	pure green
4	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	USE OF SOLAR HEAT	FOR SPACE HEATING		F24D 3/00, 5/00, 11/00, 19/00	pure green
4	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	USE OF SOLAR HEAT	FOR SWIMMING POOLS		F24S 90/00	pure green
4	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	USE OF SOLAR HEAT	SOLAR UPDRAFT TOWERS		F03D 1/04, 9/00, 13/20	pure green
4	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	USE OF SOLAR HEAT	SOLAR UPDRAFT TOWERS		F03G 6/00	pure green
4	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	USE OF SOLAR HEAT	FOR TREATMENT OF WATER, WASTE WATER OR SLUDGE		C02F 1/14	pure green
4	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	USE OF SOLAR HEAT	GAS TURBINE POWER PLANTS USING SOLAR HEAT SOURCE		F02C 1/05	pure green
3	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	HYBRID SOLAR THERMAL-PV SYSTEMS			H01L 31/0525	pure green
3	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	HYBRID SOLAR THERMAL-PV SYSTEMS			H02S 40/44	pure green
3	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	PROPULSION OF VEHICLES USING SOLAR POWER			B60K 16/00	pure green
4	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	PROPULSION OF VEHICLES USING SOLAR POWER	ELECTRIC PROPULSION OF VEHICLES USING SOLAR POWER		B60L 8/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	PRODUCING MECHANICAL POWER FROM SOLAR ENERGY			F03G 6/00-6/06	pure green
3	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	ROOF COVERING ASPECTS OF ENERGY COLLECTING DEVICES			E04D 13/00, 13/18	pure green
3	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	STEAM GENERATION USING SOLAR HEAT			F22B 1/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	STEAM GENERATION USING SOLAR HEAT			F24V 30/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	REFRIGERATION OR HEAT PUMP SYSTEMS USING SOLAR ENERGY			F25B 27/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	USE OF SOLAR ENERGY FOR DRYING MATERIALS OR OBJECTS			F26B 3/00, 3/28	pure green
3	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	SOLAR CONCENTRATORS			F24S 23/00	pure green

Level	Topic L1	Topic L2	Topic L3	Topic L4	Topic L5	IPC codes	Category
3	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	SOLAR CONCENTRATORS			G02B 7/183	pure green
3	ALTERNATIVE ENERGY PRODUCTION	SOLAR ENERGY	SOLAR PONDS			F24S 10/10	pure green
2	ALTERNATIVE ENERGY PRODUCTION	GEOTHERMAL ENERGY				F24T	pure green
3	ALTERNATIVE ENERGY PRODUCTION	GEOTHERMAL ENERGY	USE OF GEOTHERMAL HEAT			F01K	pure green
3	ALTERNATIVE ENERGY PRODUCTION	GEOTHERMAL ENERGY	USE OF GEOTHERMAL HEAT			F24F 5/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	GEOTHERMAL ENERGY	USE OF GEOTHERMAL HEAT			F24T 10/00-50/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	GEOTHERMAL ENERGY	USE OF GEOTHERMAL HEAT			H02N 10/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	GEOTHERMAL ENERGY	USE OF GEOTHERMAL HEAT			F25B 30/06	pure green
3	ALTERNATIVE ENERGY PRODUCTION	GEOTHERMAL ENERGY	PRODUCTION OF MECHANICAL POWER FROM GEOTHERMAL ENERGY			F03G 4/00-4/06, 7/04	pure green
2	ALTERNATIVE ENERGY PRODUCTION	OTHER PRODUCTION OR USE OF HEAT, NOT DERIVED FROM COMBUSTION, E.G.Ã NATURAL HEAT				F24T 10/00-50/00	pure green
2	ALTERNATIVE ENERGY PRODUCTION	OTHER PRODUCTION OR USE OF HEAT, NOT DERIVED FROM COMBUSTION, E.G.Ã NATURAL HEAT				F24V 30/00-50/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	OTHER PRODUCTION OR USE OF HEAT, NOT DERIVED FROM COMBUSTION, E.G.Ã NATURAL HEAT	HEAT PUMPS IN CENTRAL HEATING SYSTEMS USING HEAT ACCUMULATED IN STORAGE MASSES			F24D 11/02	pure green
3	ALTERNATIVE ENERGY PRODUCTION	OTHER PRODUCTION OR USE OF HEAT, NOT DERIVED FROM COMBUSTION, E.G.Ã NATURAL HEAT	HEAT PUMPS IN OTHER DOMESTIC- OR SPACE-HEATING SYSTEMS			F24D 15/04	pure green
3	ALTERNATIVE ENERGY PRODUCTION	OTHER PRODUCTION OR USE OF HEAT, NOT DERIVED FROM COMBUSTION, E.G.Ã NATURAL HEAT	HEAT PUMPS IN DOMESTIC HOT-WATER SUPPLY SYSTEMS			F24D 17/02, 18/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	OTHER PRODUCTION OR USE OF HEAT, NOT DERIVED FROM COMBUSTION, E.G.Ã NATURAL HEAT	AIR OR WATER HEATERS USING HEAT PUMPS			F24H 4/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	OTHER PRODUCTION OR USE OF HEAT, NOT DERIVED FROM COMBUSTION, E.G.Ã NATURAL HEAT	HEAT PUMPS			F25B 30/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	USING WASTE HEAT	TO PRODUCE MECHANICAL ENERGY			F01K 27/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	USING WASTE HEAT	OF COMBUSTION ENGINES			F01K 23/06-23/10	fuel efficiency
3	ALTERNATIVE ENERGY PRODUCTION	USING WASTE HEAT	OF COMBUSTION ENGINES			F01N 5/00	fuel efficiency
3	ALTERNATIVE ENERGY PRODUCTION	USING WASTE HEAT	OF COMBUSTION ENGINES			F02C 5/00-5/04	fuel efficiency
3	ALTERNATIVE ENERGY PRODUCTION	USING WASTE HEAT	OF COMBUSTION ENGINES			F25B 27/02	fuel efficiency
3	ALTERNATIVE ENERGY PRODUCTION	USING WASTE HEAT	OF STEAM ENGINE PLANTS			F01K 17/00, 23/04	fuel efficiency
3	ALTERNATIVE ENERGY PRODUCTION	USING WASTE HEAT	OF GAS-TURBINE PLANTS			F02C 6/18	fuel efficiency
3	ALTERNATIVE ENERGY PRODUCTION	USING WASTE HEAT	AS SOURCE OF ENERGY FOR REFRIGERATION PLANTS			F25B 27/02	pure green
3	ALTERNATIVE ENERGY PRODUCTION	USING WASTE HEAT	FOR TREATMENT OF WATER, WASTE WATER OR SEWAGE			C02F 1/16	pure green
3	ALTERNATIVE ENERGY PRODUCTION	USING WASTE HEAT	RECOVERY OF WASTE HEAT IN PAPER PRODUCTION			D21F 5/20	pure green
3	ALTERNATIVE ENERGY PRODUCTION	USING WASTE HEAT	FOR STEAM GENERATION BY EXPLOITATION OF THE HEAT CONTENT OF HOT HEAT CARRIERS			F22B 1/02	pure green
3	ALTERNATIVE ENERGY PRODUCTION	USING WASTE HEAT	RECUPERATION OF HEAT ENERGY FROM WASTE INCINERATION			F23G 5/46	pure green
3	ALTERNATIVE ENERGY PRODUCTION	USING WASTE HEAT	ENERGY RECOVERY IN AIR CONDITIONING			F24F 12/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	USING WASTE HEAT	ARRANGEMENTS FOR USING WASTE HEAT FROM FURNACES, KILNS, OVENS OR RETORTS			F27D 17/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	USING WASTE HEAT	REGENERATIVE HEAT-EXCHANGE APPARATUS			F28D 17/00-20/00	pure green
3	ALTERNATIVE ENERGY PRODUCTION	USING WASTE HEAT	OF GASIFICATION PLANTS			C10J 3/86	pure green
2	ALTERNATIVE ENERGY PRODUCTION	DEVICES FOR PRODUCING MECHANICAL POWER FROM MUSCLE ENERGY				F03G 5/00-5/08	pure green
3	TRANSPORTATION	VEHICLES IN GENERAL	HYBRID VEHICLES, E.G. HYBRID ELECTRIC VEHICLES (HEVS)			B60K 6/00, 6/20	pure green
4	TRANSPORTATION	VEHICLES IN GENERAL	HYBRID VEHICLES, E.G. HYBRID ELECTRIC VEHICLES (HEVS)	CONTROL SYSTEMS		B60W 20/00	pure green
4	TRANSPORTATION	VEHICLES IN GENERAL	HYBRID VEHICLES, E.G. HYBRID ELECTRIC VEHICLES (HEVS)	GEARINGS THEREFOR		F16H 3/00-3/78, 48/00-48/30	pure green
3	TRANSPORTATION	VEHICLES IN GENERAL	BRUSHLESS MOTORS			H02K 29/08	unclassified
3	TRANSPORTATION	VEHICLES IN GENERAL	ELECTROMAGNETIC CLUTCHES			H02K 49/10	unclassified
3	TRANSPORTATION	VEHICLES IN GENERAL	REGENERATIVE BRAKING SYSTEMS			B60L 7/10-7/22	unclassified
3	TRANSPORTATION	VEHICLES IN GENERAL	ELECTRIC PROPULSION WITH POWER SUPPLY FROM FORCE OF NATURE, E.G.Ã SUN, WIND			B60L 8/00	pure green
3	TRANSPORTATION	VEHICLES IN GENERAL	ELECTRIC PROPULSION WITH POWER SUPPLY EXTERNAL TO VEHICLE			B60L 9/00	pure green
4	TRANSPORTATION	VEHICLES IN GENERAL	ELECTRIC PROPULSION WITH POWER SUPPLY EXTERNAL TO VEHICLE	WITH POWER SUPPLY FROM FUEL CELLS, E.G. FOR HYDROGEN VEHICLES		B60L 50/50-58/40	pure green
3	TRANSPORTATION	VEHICLES IN GENERAL	COMBUSTION ENGINES OPERATING ON GASEOUS FUELS, E.G. HYDROGEN			F02B 43/00	fuel efficiency
3	TRANSPORTATION	VEHICLES IN GENERAL	COMBUSTION ENGINES OPERATING ON GASEOUS FUELS, E.G. HYDROGEN			F02M 21/02, 27/02	fuel efficiency
3	TRANSPORTATION	VEHICLES IN GENERAL	POWER SUPPLY FROM FORCE OF NATURE, E.G.Ã SUN, WIND			B60K 16/00	pure green
3	TRANSPORTATION	VEHICLES IN GENERAL	CHARGING STATIONS FOR ELECTRIC VEHICLES			H02J 7/00	pure green
3	TRANSPORTATION	VEHICLES OTHER THAN RAIL VEHICLES	DRAG REDUCTION			B62D 35/00, 35/02	unclassified
3	TRANSPORTATION	VEHICLES OTHER THAN RAIL VEHICLES	DRAG REDUCTION			B63B 1/34-1/40	unclassified
3	TRANSPORTATION	VEHICLES OTHER THAN RAIL VEHICLES	HUMAN-POWERED VEHICLE			B62K	pure green
3	TRANSPORTATION	VEHICLES OTHER THAN RAIL VEHICLES	HUMAN-POWERED VEHICLE			B62M 1/00, 3/00, 5/00, 6/00	pure green
2	TRANSPORTATION	RAIL VEHICLES				B61	unclassified
3	TRANSPORTATION	RAIL VEHICLES	DRAG REDUCTION			B61D 17/02	unclassified
3	TRANSPORTATION	MARINE VESSEL PROPULSION	PROPULSIVE DEVICES DIRECTLY ACTED ON BY WIND			B63H 9/00	pure green
3	TRANSPORTATION	MARINE VESSEL PROPULSION	PROPULSION BY WIND-POWERED MOTORS			B63H 13/00	pure green
3	TRANSPORTATION	MARINE VESSEL PROPULSION	PROPULSION USING ENERGY DERIVED FROM WATER MOVEMENT			B63H 19/02, 19/04	pure green
3	TRANSPORTATION	MARINE VESSEL PROPULSION	PROPULSION BY MUSCLE POWER			B63H 16/00	pure green
3	TRANSPORTATION	MARINE VESSEL PROPULSION	PROPULSION DERIVED FROM NUCLEAR ENERGY			B63H 21/18	pure green
2	TRANSPORTATION	COSMONAUTIC VEHICLES USING SOLAR ENERGY				B64G 1/44	pure green
2	ENERGY CONSERVATION	STORAGE OF ELECTRICAL ENERGY				B60K 6/28	pure green
2	ENERGY CONSERVATION	STORAGE OF ELECTRICAL ENERGY				B60W 10/26	pure green
2	ENERGY CONSERVATION	STORAGE OF ELECTRICAL ENERGY				H01M 10/44-10/46	pure green
2	ENERGY CONSERVATION	STORAGE OF ELECTRICAL ENERGY				H01G 11/00	pure green
2	ENERGY CONSERVATION	STORAGE OF ELECTRICAL ENERGY				H02J 3/28, 7/00, 15/00	pure green
2	ENERGY CONSERVATION	POWER SUPPLY CIRCUITRY				H02J	pure green
3	ENERGY CONSERVATION	POWER SUPPLY CIRCUITRY	WITH POWER SAVING MODES			H02J 9/00	pure green
2	ENERGY CONSERVATION	MEASUREMENT OF ELECTRICITY CONSUMPTION				B60L 3/00	pure green
2	ENERGY CONSERVATION	MEASUREMENT OF ELECTRICITY CONSUMPTION				G01R	pure green
2	ENERGY CONSERVATION	STORAGE OF THERMAL ENERGY				C09K 5/00	pure green
2	ENERGY CONSERVATION	STORAGE OF THERMAL ENERGY				F24H 7/00	pure green
2	ENERGY CONSERVATION	STORAGE OF THERMAL ENERGY				F28D 20/00, 20/02	pure green
3	ENERGY CONSERVATION	LOW ENERGY LIGHTING	ELECTROLUMINESCENT LIGHT SOURCES (E.G. LEDS, OLEDS, PLEDS)			F21K 99/00	unclassified
3	ENERGY CONSERVATION	LOW ENERGY LIGHTING	ELECTROLUMINESCENT LIGHT SOURCES (E.G. LEDS, OLEDS, PLEDS)			F21L 4/02	unclassified
3	ENERGY CONSERVATION	LOW ENERGY LIGHTING	ELECTROLUMINESCENT LIGHT SOURCES (E.G. LEDS, OLEDS, PLEDS)			H01L 33/00-33/64, 51/50	unclassified
3	ENERGY CONSERVATION	LOW ENERGY LIGHTING	ELECTROLUMINESCENT LIGHT SOURCES (E.G. LEDS, OLEDS, PLEDS)			H05B 33/00	unclassified
2	ENERGY CONSERVATION	THERMAL BUILDING INSULATION, IN GENERAL				E04B 1/62, 1/74-1/80, 1/88, 1/90	unclassified
3	ENERGY CONSERVATION	THERMAL BUILDING INSULATION, IN GENERAL	INSULATING BUILDING ELEMENTS			E04C 1/40, 1/41, 2/284-2/296	unclassified
4	ENERGY CONSERVATION	THERMAL BUILDING INSULATION, IN GENERAL	INSULATING BUILDING ELEMENTS	FOR DOOR OR WINDOW OPENINGS		E06B 3/263	unclassified
4	ENERGY CONSERVATION	THERMAL BUILDING INSULATION, IN GENERAL	INSULATING BUILDING ELEMENTS	FOR WALLS		E04B 2/00	unclassified
4	ENERGY CONSERVATION	THERMAL BUILDING INSULATION, IN GENERAL	INSULATING BUILDING ELEMENTS	FOR WALLS		E04F 13/08	unclassified
4	ENERGY CONSERVATION	THERMAL BUILDING INSULATION, IN GENERAL	INSULATING BUILDING ELEMENTS	FOR FLOORS		E04B 5/00	unclassified
4	ENERGY CONSERVATION	THERMAL BUILDING INSULATION, IN GENERAL	INSULATING BUILDING ELEMENTS	FOR FLOORS		E04F 15/18	unclassified
4	ENERGY CONSERVATION	THERMAL BUILDING INSULATION, IN GENERAL	INSULATING BUILDING ELEMENTS	FOR ROOFS		E04B 7/00	unclassified
4	ENERGY CONSERVATION	THERMAL BUILDING INSULATION, IN GENERAL	INSULATING BUILDING ELEMENTS	FOR ROOFS		E04D 1/28, 3/35, 13/16	unclassified
4	ENERGY CONSERVATION	THERMAL BUILDING INSULATION, IN GENERAL	INSULATING BUILDING ELEMENTS	FOR CEILINGS		E04B 9/00	unclassified
4	ENERGY CONSERVATION	THERMAL BUILDING INSULATION, IN GENERAL	INSULATING BUILDING ELEMENTS	FOR CEILINGS		E04F 13/08	unclassified
2	ENERGY CONSERVATION	RECOVERING MECHANICAL ENERGY				F03G 7/08	pure green
3	ENERGY CONSERVATION	RECOVERING MECHANICAL ENERGY	CHARGEABLE MECHANICAL ACCUMULATORS IN VEHICLES			B60K 6/10, 6/30	pure green
3	ENERGY CONSERVATION	RECOVERING MECHANICAL ENERGY	CHARGEABLE MECHANICAL ACCUMULATORS IN VEHICLES			B60L 50/30	pure green
2	WASTE MANAGEMENT	WASTE DISPOSAL				B09B	unclassified
2	WASTE MANAGEMENT	WASTE DISPOSAL				B65F	unclassified
3	WASTE MANAGEMENT	TREATMENT OF WASTE	DISINFECTION OR STERILISATION			A61L 11/00	unclassified
3	WASTE MANAGEMENT	TREATMENT OF WASTE	TREATMENT OF HAZARDOUS OR TOXIC WASTE			A62D 3/00, 101/00	unclassified
3	WASTE MANAGEMENT	TREATMENT OF WASTE	TREATING RADIOACTIVELY CONTAMINATED MATERIAL; DECONTAMINATION ARRANGEMENTS THEREFOR			G21F 9/00	unclassified
3	WASTE MANAGEMENT	TREATMENT OF WASTE	REFUSE SEPARATION			B03B 9/06	unclassified
3	WASTE MANAGEMENT	TREATMENT OF WASTE	RECLAMATION OF CONTAMINATED SOIL			B09C	unclassified
3	WASTE MANAGEMENT	TREATMENT OF WASTE	MECHANICAL TREATMENT OF WASTE PAPER			D21B 1/08, 1/32	unclassified
2	WASTE MANAGEMENT	CONSUMING WASTE BY COMBUSTION				F23G	unclassified
3	WASTE MANAGEMENT	REUSE OF WASTE MATERIALS	USE OF RUBBER WASTE IN FOOTWEAR			A43B 1/12, 21/14	unclassified
3	WASTE MANAGEMENT	REUSE OF WASTE MATERIALS	MANUFACTURE OF ARTICLES FROM WASTE METAL PARTICLES			B22F 8/00	unclassified
3	WASTE MANAGEMENT	REUSE OF WASTE MATERIALS	PRODUCTION OF HYDRAULIC CEMENTS FROM WASTE MATERIALS			C04B 7/24-7/30	unclassified

Level	Topic L1	Topic L2	Topic L3	Topic L4	Topic L5	IPC codes	Category
3	WASTE MANAGEMENT	REUSE OF WASTE MATERIALS	USE OF WASTE MATERIALS AS FILLERS FOR MORTARS, CONCRETE			C04B 18/04-18/10	unclassified
3	WASTE MANAGEMENT	REUSE OF WASTE MATERIALS	PRODUCTION OF FERTILISERS FROM WASTE OR REFUSE			C05F	unclassified
3	WASTE MANAGEMENT	REUSE OF WASTE MATERIALS	RECOVERY OR WORKING-UP OF WASTE MATERIALS			C08J 11/00-11/28	unclassified
3	WASTE MANAGEMENT	REUSE OF WASTE MATERIALS	RECOVERY OR WORKING-UP OF WASTE MATERIALS			C09K 11/01	unclassified
3	WASTE MANAGEMENT	REUSE OF WASTE MATERIALS	RECOVERY OR WORKING-UP OF WASTE MATERIALS			C11B 11/00, 13/00-13/04	unclassified
3	WASTE MANAGEMENT	REUSE OF WASTE MATERIALS	RECOVERY OR WORKING-UP OF WASTE MATERIALS			C14C 3/32	unclassified
3	WASTE MANAGEMENT	REUSE OF WASTE MATERIALS	RECOVERY OR WORKING-UP OF WASTE MATERIALS			C21B 3/04	unclassified
3	WASTE MANAGEMENT	REUSE OF WASTE MATERIALS	RECOVERY OR WORKING-UP OF WASTE MATERIALS			C25C 1/00	unclassified
3	WASTE MANAGEMENT	REUSE OF WASTE MATERIALS	RECOVERY OR WORKING-UP OF WASTE MATERIALS			D01F 13/00-13/04	unclassified
4	WASTE MANAGEMENT	REUSE OF WASTE MATERIALS	RECOVERY OR WORKING-UP OF WASTE MATERIALS	RECOVERY OF PLASTICS MATERIALS FROM WASTE		B29B 17/00	unclassified
4	WASTE MANAGEMENT	REUSE OF WASTE MATERIALS	RECOVERY OR WORKING-UP OF WASTE MATERIALS	DISASSEMBLY OF VEHICLES FOR RECOVERY OF SALVAGEABLE PARTS		B62D 67/00	unclassified
4	WASTE MANAGEMENT	REUSE OF WASTE MATERIALS	RECOVERY OR WORKING-UP OF WASTE MATERIALS	OF POLYMERS		C08J 11/04-11/28	unclassified
4	WASTE MANAGEMENT	REUSE OF WASTE MATERIALS	RECOVERY OR WORKING-UP OF WASTE MATERIALS	PRODUCTION OF LIQUID HYDROCARBONS FROM RUBBER WASTE		C10G 1/10	unclassified
4	WASTE MANAGEMENT	REUSE OF WASTE MATERIALS	RECOVERY OR WORKING-UP OF WASTE MATERIALS	SOLID FUELS DERIVED FROM WASTE		C10L 5/46, 5/48	unclassified
4	WASTE MANAGEMENT	REUSE OF WASTE MATERIALS	RECOVERY OR WORKING-UP OF WASTE MATERIALS	OBTAINING METALS FROM SCRAP		C22B 7/00-7/04, 19/30, 25/06	unclassified
4	WASTE MANAGEMENT	REUSE OF WASTE MATERIALS	RECOVERY OR WORKING-UP OF WASTE MATERIALS	DISINTEGRATING FIBROUS MATERIALS FOR REUSE		D01C 11/00	unclassified
4	WASTE MANAGEMENT	REUSE OF WASTE MATERIALS	RECOVERY OR WORKING-UP OF WASTE MATERIALS	WORKING-UP WASTE PAPER TO OBTAIN CELLULOSE		D21C 5/02	unclassified
4	WASTE MANAGEMENT	REUSE OF WASTE MATERIALS	RECOVERY OR WORKING-UP OF WASTE MATERIALS	RECLAIMING SALVAGEABLE COMPONENTS OR MATERIAL FROM ELECTRIC DISCHARGE TUBES OR LAMPS		H01J 9/50, 9/52	unclassified
4	WASTE MANAGEMENT	REUSE OF WASTE MATERIALS	RECOVERY OR WORKING-UP OF WASTE MATERIALS	RECLAIMING SERVICEABLE PARTS OF WASTE CELLS, BATTERIES OR ACCUMULATORS		H01M 6/52, 10/54	unclassified
3	WASTE MANAGEMENT	POLLUTION CONTROL	CARBON CAPTURE AND STORAGE			B01D 53/14, 53/22, 53/62	pure green
3	WASTE MANAGEMENT	POLLUTION CONTROL	CARBON CAPTURE AND STORAGE			B65G 5/00	pure green
3	WASTE MANAGEMENT	POLLUTION CONTROL	CARBON CAPTURE AND STORAGE			C01B 32/50	pure green
3	WASTE MANAGEMENT	POLLUTION CONTROL	CARBON CAPTURE AND STORAGE			E21B 41/00, 43/16	pure green
3	WASTE MANAGEMENT	POLLUTION CONTROL	CARBON CAPTURE AND STORAGE			E21F 17/16	pure green
3	WASTE MANAGEMENT	POLLUTION CONTROL	CARBON CAPTURE AND STORAGE			F25J 3/02	pure green
4	WASTE MANAGEMENT	POLLUTION CONTROL	AIR QUALITY MANAGEMENT	TREATMENT OF WASTE GASES		B01D 53/00-53/96	unclassified
5	WASTE MANAGEMENT	POLLUTION CONTROL	AIR QUALITY MANAGEMENT	TREATMENT OF WASTE GASES	EXHAUST APPARATUS FOR COMBUSTION ENGINES WITH MEANS FOR TREATING EXHAUST	F01N 3/00-3/38	fuel efficiency
5	WASTE MANAGEMENT	POLLUTION CONTROL	AIR QUALITY MANAGEMENT	TREATMENT OF WASTE GASES	RENDERING EXHAUST GASES INNOCUOUS	B01D 53/92	fuel efficiency
5	WASTE MANAGEMENT	POLLUTION CONTROL	AIR QUALITY MANAGEMENT	TREATMENT OF WASTE GASES	RENDERING EXHAUST GASES INNOCUOUS	F02B 75/10	fuel efficiency
5	WASTE MANAGEMENT	POLLUTION CONTROL	AIR QUALITY MANAGEMENT	TREATMENT OF WASTE GASES	REMOVAL OF WASTE GASES OR DUST IN STEEL PRODUCTION	C21C 5/38	fuel efficiency
5	WASTE MANAGEMENT	POLLUTION CONTROL	AIR QUALITY MANAGEMENT	TREATMENT OF WASTE GASES	COMBUSTION APPARATUS USING RECIRCULATION OF FLUE GASES	C10B 21/18	fuel efficiency
5	WASTE MANAGEMENT	POLLUTION CONTROL	AIR QUALITY MANAGEMENT	TREATMENT OF WASTE GASES	COMBUSTION APPARATUS USING RECIRCULATION OF FLUE GASES	F23B 80/02	fuel efficiency
5	WASTE MANAGEMENT	POLLUTION CONTROL	AIR QUALITY MANAGEMENT	TREATMENT OF WASTE GASES	COMBUSTION APPARATUS USING RECIRCULATION OF FLUE GASES	F23C 9/00	fuel efficiency
5	WASTE MANAGEMENT	POLLUTION CONTROL	AIR QUALITY MANAGEMENT	TREATMENT OF WASTE GASES	COMBUSTION OF WASTE GASES OR NOXIOUS GASES	F23G 7/06	fuel efficiency
5	WASTE MANAGEMENT	POLLUTION CONTROL	AIR QUALITY MANAGEMENT	TREATMENT OF WASTE GASES	ELECTRICAL CONTROL OF EXHAUST GAS TREATING APPARATUS	F01N 9/00	unclassified
4	WASTE MANAGEMENT	POLLUTION CONTROL	AIR QUALITY MANAGEMENT	SEPARATING DISPERSED PARTICLES FROM GASES OR VAPOURS		B01D 45/00-51/00	unclassified
4	WASTE MANAGEMENT	POLLUTION CONTROL	AIR QUALITY MANAGEMENT	SEPARATING DISPERSED PARTICLES FROM GASES OR VAPOURS		B03C 3/00	unclassified
5	WASTE MANAGEMENT	POLLUTION CONTROL	AIR QUALITY MANAGEMENT	SEPARATING DISPERSED PARTICLES FROM GASES OR VAPOURS	DUST REMOVAL FROM FURNACES	C21B 7/22	unclassified
5	WASTE MANAGEMENT	POLLUTION CONTROL	AIR QUALITY MANAGEMENT	SEPARATING DISPERSED PARTICLES FROM GASES OR VAPOURS	DUST REMOVAL FROM FURNACES	C21C 5/38	unclassified
5	WASTE MANAGEMENT	POLLUTION CONTROL	AIR QUALITY MANAGEMENT	SEPARATING DISPERSED PARTICLES FROM GASES OR VAPOURS	DUST REMOVAL FROM FURNACES	F27B 1/18	unclassified
5	WASTE MANAGEMENT	POLLUTION CONTROL	AIR QUALITY MANAGEMENT	SEPARATING DISPERSED PARTICLES FROM GASES OR VAPOURS	DUST REMOVAL FROM FURNACES	F27B 15/12	unclassified
4	WASTE MANAGEMENT	POLLUTION CONTROL	AIR QUALITY MANAGEMENT	USE OF ADDITIVES IN FUELS OR FIRES TO REDUCE SMOKE OR FACILITATE SOOT REMOVAL		C10L 10/02, 10/06	unclassified
4	WASTE MANAGEMENT	POLLUTION CONTROL	AIR QUALITY MANAGEMENT	USE OF ADDITIVES IN FUELS OR FIRES TO REDUCE SMOKE OR FACILITATE SOOT REMOVAL		F23J 7/00	unclassified
4	WASTE MANAGEMENT	POLLUTION CONTROL	AIR QUALITY MANAGEMENT	ARRANGEMENTS OF DEVICES FOR TREATING SMOKE OR FUMES FROM COMBUSTION APPARATUS		F23J 15/00	unclassified
4	WASTE MANAGEMENT	POLLUTION CONTROL	AIR QUALITY MANAGEMENT	DUST-LAYING OR DUST-ABSORBING MATERIALS		C09K 3/22	unclassified
4	WASTE MANAGEMENT	POLLUTION CONTROL	AIR QUALITY MANAGEMENT	POLLUTION ALARMS		G08B 21/12	unclassified
4	WASTE MANAGEMENT	POLLUTION CONTROL	CONTROL OF WATER POLLUTION	TREATING WASTE-WATER OR SEWAGE		B63J 4/00	unclassified
4	WASTE MANAGEMENT	POLLUTION CONTROL	CONTROL OF WATER POLLUTION	TREATING WASTE-WATER OR SEWAGE		C02F	unclassified
5	WASTE MANAGEMENT	POLLUTION CONTROL	CONTROL OF WATER POLLUTION	TREATING WASTE-WATER OR SEWAGE	TO PRODUCE FERTILISERS	C05F 7/00	unclassified
4	WASTE MANAGEMENT	POLLUTION CONTROL	CONTROL OF WATER POLLUTION	MATERIALS FOR TREATING LIQUID POLLUTANTS		C09K 3/32	unclassified
4	WASTE MANAGEMENT	POLLUTION CONTROL	CONTROL OF WATER POLLUTION	REMOVING POLLUTANTS FROM OPEN WATER		B63B 35/32	unclassified
4	WASTE MANAGEMENT	POLLUTION CONTROL	CONTROL OF WATER POLLUTION	REMOVING POLLUTANTS FROM OPEN WATER		E02B 15/04	unclassified
4	WASTE MANAGEMENT	POLLUTION CONTROL	CONTROL OF WATER POLLUTION	PLUMBING INSTALLATIONS FOR WASTE WATER		E03C 1/12	unclassified
4	WASTE MANAGEMENT	POLLUTION CONTROL	CONTROL OF WATER POLLUTION	MANAGEMENT OF SEWAGE		C02F 1/00, 3/00, 9/00	unclassified
4	WASTE MANAGEMENT	POLLUTION CONTROL	CONTROL OF WATER POLLUTION	MANAGEMENT OF SEWAGE		E03F	unclassified
3	WASTE MANAGEMENT	POLLUTION CONTROL	MEANS FOR PREVENTING RADIOACTIVE CONTAMINATION IN THE EVENT OF REACTOR LEAKAGE			G21C 13/10	unclassified
2	AGRICULTURE / FORESTRY	FORESTRY TECHNIQUES				A01C 23/00	unclassified
2	AGRICULTURE / FORESTRY	ALTERNATIVE IRRIGATION TECHNIQUES				A01C 25/00	unclassified
2	AGRICULTURE / FORESTRY	PESTICIDE ALTERNATIVES				A01N 25/00-65/00	unclassified
2	AGRICULTURE / FORESTRY	SOIL IMPROVEMENT				C09K 17/00	unclassified
2	AGRICULTURE / FORESTRY	SOIL IMPROVEMENT				E02D 3/00	unclassified
3	AGRICULTURE / FORESTRY	SOIL IMPROVEMENT	ORGANIC FERTILISERS DERIVED FROM WASTE			C05F	unclassified
2	ADMINISTRATIVE, REGULATORY OR DESIGN ASPECTS	COMMUTING, E.G., HOV, TELEWORKING, ETC.				G06Q	unclassified
2	ADMINISTRATIVE, REGULATORY OR DESIGN ASPECTS	COMMUTING, E.G., HOV, TELEWORKING, ETC.				G08G	unclassified
2	ADMINISTRATIVE, REGULATORY OR DESIGN ASPECTS	CARBON/EMISSIONS TRADING, E.G. POLLUTION CREDITS				G06Q	unclassified
2	ADMINISTRATIVE, REGULATORY OR DESIGN ASPECTS	STATIC STRUCTURE DESIGN				E04H 1/00	unclassified
2	NUCLEAR POWER GENERATION	NUCLEAR ENGINEERING				G21	pure green
3	NUCLEAR POWER GENERATION	NUCLEAR ENGINEERING	FUSION REACTORS			G21B	pure green
3	NUCLEAR POWER GENERATION	NUCLEAR ENGINEERING	NUCLEAR (FISSION) REACTORS			G21C	pure green
3	NUCLEAR POWER GENERATION	NUCLEAR ENGINEERING	NUCLEAR POWER PLANT			G21D	pure green
2	NUCLEAR POWER GENERATION	GAS TURBINE POWER PLANTS USING HEAT SOURCE OF NUCLEAR ORIGIN				F02C 1/05	pure green

TABLE 6: FINAL CATEGORY ASSIGNMENT FOR THE FF SOURCE CLASSIFICATION

Main Category	Description	IPC codes	Exclusion IPC codes	Category
COAL GASIFICATION	Production of combustible gases containing carbon monoxide from solid carbonaceous fuels	C10J3		fuel efficiency
IMPROVED BURNERS	Combustion apparatus specially adapted for combustion of two or more kinds of fuel simultaneously or alternately, at least one kind of fuel being fluent	F23C1	B60, B68, F24, F27	fuel efficiency
IMPROVED BURNERS	Combustion apparatus characterized by the arrangement or mounting of burners; Disposition of burners to obtain a loop flame.	F23C5/24	B60, B68, F24, F27	fuel efficiency
IMPROVED BURNERS	Combustion apparatus characterized by the combination of two or more combustion chambers (using fluent fuel)	F23C6	B60, B68, F24, F27	fuel efficiency
IMPROVED BURNERS	Combustion apparatus characterized by the combination of two or more combustion chambers (using only solid fuel)	F23B10	B60, B68, F24, F27	fuel efficiency
IMPROVED BURNERS	Combustion apparatus with driven means for agitating the burning fuel; Combustion apparatus with driven means for advancing the burning fuel through the combustion chamber	F23B30	B60, B68, F24, F27	fuel efficiency
IMPROVED BURNERS	Combustion apparatus characterized by means for returning solid combustion residues to the combustion chamber	F23B70	B60, B68, F24, F27	fuel efficiency
IMPROVED BURNERS	Combustion apparatus characterized by means creating a distinct flow path for flue gases or for noncombusted gases given off by the fuel	F23B80	B60, B68, F24, F27	fuel efficiency
IMPROVED BURNERS	Burners for combustion of pulverulent fuel	F23D1	B60, B68, F24, F27	fuel efficiency
IMPROVED BURNERS	Burners in which drops of liquid fuel impinge on a surface	F23D7	B60, B68, F24, F27	fuel efficiency
IMPROVED BURNERS	Burners for combustion simultaneously or alternatively of gaseous or liquid or pulverulent fuel	F23D17	B60, B68, F24, F27	fuel efficiency
FLUIDIZED BED COMBUSTION	Chemical or physical processes (and apparatus therefor) conducted in the presence of fluidised particles, with liquid as a fluidising medium	B01J8/20-22		fuel efficiency
FLUIDIZED BED COMBUSTION	Chemical or physical processes (and apparatus therefor) conducted in the presence of fluidised particles, according to fluidised-bed technique	B01J8/24-30		fuel efficiency
FLUIDIZED BED COMBUSTION	Fluidised-bed furnaces; Other furnaces using or treating finely-divided materials in dispersion	F27B15		fuel efficiency
FLUIDIZED BED COMBUSTION	Apparatus in which combustion takes place in a fluidised bed of fuel or other particles	F23C10		fuel efficiency
IMPROVED BOILERS FOR STEAM GENERATION	Modifications of boiler construction, or of tube systems, dependent on installation of combustion apparatus; Arrangements or dispositions of combustion apparatus	F22B31		fuel efficiency
IMPROVED BOILERS FOR STEAM GENERATION	Steam generation plants, e.g. comprising steam boilers of different types in mutual association; Combinations of low- and high-pressure boilers	F22B33/14-16		fuel efficiency
IMPROVED STEAM ENGINES	Plants characterised by the use of steam or heat accumulators, or intermediate steam heaters, therein	F01K3		fuel efficiency
IMPROVED STEAM ENGINES	Plants characterised by use of means for storing steam in an alkali to increase steam pressure, e.g. of Honigmann or Koenemann type	F01K5		fuel efficiency
IMPROVED STEAM ENGINES	Plants characterised by more than one engine delivering power external to the plant, the engines being driven by different fluids	F01K23		fuel efficiency
SUPERHEATERS	Superheating of steam	F22G		fuel efficiency
IMPROVED GAS TURBINES	Gas turbine plants - Heating air supply before combustion, e.g. by exhaust gases	F02C7/08-105		fuel efficiency
IMPROVED GAS TURBINES	Cooling of gas turbine plants	F02C7/12-143		fuel efficiency
IMPROVED GAS TURBINES	Gas turbine plants - Preventing corrosion in gas-swept spaces	F02C7/30		fuel efficiency
COMBINED CYCLES	Plants characterised by more than one engine delivering power external to the plant, the engines being driven by different fluids	F01K23/02-10		fuel efficiency
COMBINED CYCLES	Gas turbine plants characterised by the use of combustion products as the working fuel	F02C3/20-36		fuel efficiency
COMBINED CYCLES	Combinations of gas-turbine plants with other apparatus; Supplying working fluid to a user, e.g. a chemical process, which returns working fluid to a turbine of the plant	F02C6/10-12		fuel efficiency
IMPROVED COMPRESSED-IGNITION ENGINES	Engines characterised by fuel-air mixture compression ignition	F02B1/12-14	B60, B68, F24, F27	fuel efficiency
IMPROVED COMPRESSED-IGNITION ENGINES	Engines characterised by air compression and subsequent fuel addition; with compression ignition	F02B3/06-10	B60, B68, F24, F27	fuel efficiency
IMPROVED COMPRESSED-IGNITION ENGINES	Engines characterised by the fuel-air charge being ignited by compression ignition of an additional fuel	F02B7	B60, B68, F24, F27	fuel efficiency
IMPROVED COMPRESSED-IGNITION ENGINES	Engines characterised by both fuel-air mixture compression and air compression, or characterised by both positive ignition and compression ignition, e.g. in different cylinders	F02B11	B60, B68, F24, F27	fuel efficiency
IMPROVED COMPRESSED-IGNITION ENGINES	Engines characterised by the introduction of liquid fuel into cylinders by use of auxiliary fluid; Compression ignition engines using air or gas for blowing fuel into compressed air in cylinder	F02B13/02-04	B60, B68, F24, F27	fuel efficiency
IMPROVED COMPRESSED-IGNITION ENGINES	Methods of operating air-compressing compression-ignition engines involving introduction of small quantities of fuel in the form of a fine mist into the air in the engine's intake.	F02B49	B60, B68, F24, F27	fuel efficiency
COGENERATION	Use of steam or condensate extracted or exhausted from steam engine plant; Returning energy of steam, in exchanged form, to process, e.g. use of exhaust steam for drying solid fuel of plant	F01K17/06		fuel efficiency
COGENERATION	Plants for converting heat or fluid energy into mechanical energy	F01K27		fuel efficiency
COGENERATION	Using the waste heat of gas-turbine plants outside the plants themselves, e.g. gas-turbine power heat plants	F02C6/18		fuel efficiency
COGENERATION	Profiting from waste heat of combustion engines	F02G5		fuel efficiency
COGENERATION	Machines, plant, or systems using waste heat, e.g. from internal-combustion engines	F25B27/02		fuel efficiency
TRADITIONAL FOSSIL FUELS	Production of fuel gases by carburetting air or other gases without pyrolysis	C10J		fuel efficiency
TRADITIONAL FOSSIL FUELS	Hydraulic Engineering	E02B		fuel efficiency
TRADITIONAL FOSSIL FUELS	Steam engine plants; steam accumulators; engine plants not otherwise provided for; engines using special working fluids or cycles	F01K		fuel efficiency
TRADITIONAL FOSSIL FUELS	Gas-turbine plants; air intakes for jet-propulsion plants; controlling fuel supply in air-breathing jet-propulsion plants	F02C		fuel efficiency
TRADITIONAL FOSSIL FUELS	Steam generation	F22		fuel efficiency
TRADITIONAL FOSSIL FUELS	Combustion apparatus; combustion processes	F23		fuel efficiency
TRADITIONAL FOSSIL FUELS	Production or use of heat not otherwise provided for	F24J		fuel efficiency
TRADITIONAL FOSSIL FUELS	Furnaces; kilns; ovens; retorts	F27		fuel efficiency
TRADITIONAL FOSSIL FUELS	Heat exchange in general	F28		fuel efficiency

TABLE 7: FINAL CATEGORY ASSIGNMENT FOR THE CK SOURCE CLASSIFICATION

OECD-env tech Categories assigned	Classified CPC level	CPC codes	Category
1. Environmental Management	8	C03C2213/02; D06F2105/02; D21F1/66	unclassified
2. Climate change mitigation technologies related to energy generation, transmission or distribution	6	C10L1/00; C10L10/00; E21B37/00; E21B44/00; E21B49/00	fuel efficiency
2. Climate change mitigation technologies related to energy generation, transmission or distribution	8	C09K8/52; C10K1/002; C10K1/02; C10K3/06; C10L2250/06; C10L2270/04; C10L2290/02; C10L2290/04	fuel efficiency
2. Climate change mitigation technologies related to energy generation, transmission or distribution		C10L2290/06; C10L2290/10; C10L2290/24; C10L2290/26; C10L2290/28; C10L2290/30; C10L2290/58; C10L2300/20	fuel efficiency
2. Climate change mitigation technologies related to energy generation, transmission or distribution		C10L3/003; C10L9/08; C10L9/10; C10M2211/02; C12M21/04; E21B17/003; E21B23/02; E21B36/008	fuel efficiency
2. Climate change mitigation technologies related to energy generation, transmission or distribution		E21B36/02; E21B43/16; E21B43/34; E21B47/002; E21B47/008; E21B47/04; E21B7/04; E21C41/16	fuel efficiency
2. Climate change mitigation technologies related to energy generation, transmission or distribution		F16H57/04; F22B37/008; F23R2900/03281; F25J2260/60	fuel efficiency
2. Climate change mitigation technologies related to energy generation, transmission or distribution	9	C09K8/592; C09K8/62; C10B49/04; C10K3/023; C10K3/04; C10L2200/029; C10L2290/141; C10L2290/146	fuel efficiency
2. Climate change mitigation technologies related to energy generation, transmission or distribution		C10L2290/543; C10L2290/544; C10L2290/545; C10L2290/547; C10L2290/567; C10L3/08; C10L3/10; C10L5/44	fuel efficiency
2. Climate change mitigation technologies related to energy generation, transmission or distribution		C10M2207/021; C10M2207/046; C10M2207/283; C10M2207/34; E21B43/26; E21B47/13; E21F17/06; F01C11/008	fuel efficiency
2. Climate change mitigation technologies related to energy generation, transmission or distribution		F22B1/18; F22B37/003	fuel efficiency
2. Climate change mitigation technologies related to energy generation, transmission or distribution	10	C09K8/035; C10B49/22; C10K1/101; C10L2200/0213; C10M129/74; C10M129/76; C10M2207/125; C10M2207/129	fuel efficiency
2. Climate change mitigation technologies related to energy generation, transmission or distribution		C10M2207/289; C10M2215/042; E21B17/1021; E21B33/04; E21B33/134; E21B43/128; E21B47/0228; F01C1/084	fuel efficiency
2. Climate change mitigation technologies related to energy generation, transmission or distribution		F01C1/107	fuel efficiency
2. Climate change mitigation technologies related to energy generation, transmission or distribution	11	C10L5/363; C10L5/366; E21B43/127; F23R3/20	fuel efficiency
2. Climate change mitigation technologies related to energy generation, transmission or distribution	12	E21B33/0385	fuel efficiency
2. Climate change mitigation technologies related to energy generation, transmission or distribution	6	H02K13/00; H02K33/00; H02K55/00; H02K7/00	unclassified
2. Climate change mitigation technologies related to energy generation, transmission or distribution	8	H02K15/04; H02K15/06; H02K15/10; H02K15/12; H02K2203/15; H02K2213/09; H02K3/46; H02N2/18	unclassified
2. Climate change mitigation technologies related to energy generation, transmission or distribution	9	H02K21/04; H02K21/44; H02K3/18; H02K3/28; H02N1/006	unclassified
2. Climate change mitigation technologies related to energy generation, transmission or distribution	10	H02K1/26; H02K17/165; H02K19/24	unclassified
2. Climate change mitigation technologies related to energy generation, transmission or distribution	11	H02K15/0093	unclassified
2. Climate change mitigation technologies related to energy generation, transmission or distribution	6	H01M2008/00; H01M2250/00; H01M8/00; H05K9/00; Y04S10/00; Y04S40/00	pure green
2. Climate change mitigation technologies related to energy generation, transmission or distribution	8	B63B77/10; B63C11/52; F21S8/006; F22B1/006; H01M14/005; H01M16/003; H01M6/42; H02P2101/15	pure green
2. Climate change mitigation technologies related to energy generation, transmission or distribution		Y04S20/12; Y04S50/10; Y10S136/291; Y10S323/906; Y10T436/24	pure green
2. Climate change mitigation technologies related to energy generation, transmission or distribution	9	B01D2258/0208; B29L2031/3468; B63J2003/043; B66C1/108; B66C23/185; C01B2203/84; F16N2210/025; F17C2270/0763	pure green
2. Climate change mitigation technologies related to energy generation, transmission or distribution		F22B1/023; F28D2021/0054; G05D3/105; H01M10/0422; H01M10/049; H01M10/056; H01M10/66; H01M4/36	pure green
2. Climate change mitigation technologies related to energy generation, transmission or distribution		H01M4/64; H01M50/502; H01M50/531; H01M50/691; Y10S376/904; Y10T137/4757	pure green
2. Climate change mitigation technologies related to energy generation, transmission or distribution	10	B29L2031/085; B66C23/207; C10L2200/0469; C25D7/126; F16H2057/02078; G05B2219/2619; H01L27/1421; H01L31/0445	pure green
2. Climate change mitigation technologies related to energy generation, transmission or distribution		H01L31/0475; H01L31/068; H01L31/188; H01M10/465; H01M2010/4271; H01M2010/4278; H01M4/131; H01M4/136	pure green
2. Climate change mitigation technologies related to energy generation, transmission or distribution		H01M4/9016; H01M50/1385; H01M50/358; H01M50/529; H01M6/185; H05K2201/10037; Y10S977/948; Y10T29/49108	pure green
2. Climate change mitigation technologies related to energy generation, transmission or distribution		Y10T29/49355; Y10T29/53135	pure green
2. Climate change mitigation technologies related to energy generation, transmission or distribution	11	H01L25/042; H01L27/3227; H01L31/02008; H01L31/02021; H01L31/02167; H01L31/022425; H01L31/0504; H01L31/0725	pure green
2. Climate change mitigation technologies related to energy generation, transmission or distribution		H01L31/073; H01L31/074; H01L31/0745; H01L31/0749; H01L31/076; H01M10/6571; H01M4/1391; H01M4/1397	pure green
2. Climate change mitigation technologies related to energy generation, transmission or distribution	12	H01M50/555	pure green
4. Climate change mitigation technologies related to transportation	8	B01D2258/01; B01D2279/60; B01D35/005; B60W2710/06; B60Y2300/42; B60Y2300/52; G01K2205/04; G01M15/14	fuel efficiency
4. Climate change mitigation technologies related to transportation	9	B60K2015/03236; B60L2260/12; B60L2270/12; B60W2510/0638; B60W2510/0657; B60W2510/0676; B60W2710/021	fuel efficiency
4. Climate change mitigation technologies related to transportation	10	B60L2270/142; B60L2270/145	fuel efficiency
4. Climate change mitigation technologies related to transportation	6	B60W2030/00; B60W2040/00; B60W2552/00; B60W2554/00; B60W2556/00; B60W30/00; B60W40/00	unclassified
4. Climate change mitigation technologies related to transportation	8	B60L2270/40; B60L9/005; B60L9/32; B60M1/36; B60W2420/42; B60W2420/52; B60W2420/54; B60W2520/06	unclassified
4. Climate change mitigation technologies related to transportation		B60W2520/10; B60W2540/043; B60W2540/10; B60W2540/16; B60W2540/18; B60W2540/215; B60W2540/221; B60W2555/20	unclassified
4. Climate change mitigation technologies related to transportation		B60W2555/60; B60W2710/18; B60W2710/20; B60W2720/10; B60W2756/10; B60W50/0097; B60W50/06; B60W50/08	unclassified
4. Climate change mitigation technologies related to transportation		B60W60/001	unclassified
4. Climate change mitigation technologies related to transportation	9	B60K17/043; B60K17/16; B60M1/14; B60M1/28; B60M1/307; B60M1/34; B60W2050/0075; B60W2420/403	unclassified
4. Climate change mitigation technologies related to transportation		B60W2510/305; B60W2720/403; B60W2754/30; B60W60/0053	unclassified
4. Climate change mitigation technologies related to transportation	10	B60K17/08; B60L2270/147; B60W2050/0008; B60W2050/0018	unclassified
4. Climate change mitigation technologies related to transportation	11	B60W2050/0005	unclassified
4. Climate change mitigation technologies related to transportation	6	B60L1/00; B60L13/00; B60L15/00; B60L3/00; B60L5/00; B60L50/00; B60L53/00; B60L55/00	pure green
4. Climate change mitigation technologies related to transportation		B60L58/00; B60L7/00; B60M3/00; B60M7/00; B60W10/00; B60W20/00; B64D2211/00; B64D2221/00	pure green
4. Climate change mitigation technologies related to transportation	8	B60K2001/003; B60K2016/003; B60K7/0007; B60L2200/10; B60L2200/12; B60L2200/18; B60L2200/22; B60L2200/26	pure green
4. Climate change mitigation technologies related to transportation		B60L2200/30; B60L2200/32; B60L2200/40; B60L2210/10; B60L2210/20; B60L2210/30; B60L2210/40; B60L2240/60	pure green
4. Climate change mitigation technologies related to transportation		B60L2240/70; B60L2240/80; B60L2250/10; B60L2250/12; B60L2250/16; B60L2250/20; B60L2250/24; B60L2250/26	pure green
4. Climate change mitigation technologies related to transportation		B60L2260/20; B60L2270/20; B60L8/003; B60L8/006; B60L9/16; B60Y2300/91; B60Y2306/01; B63H21/12	pure green
4. Climate change mitigation technologies related to transportation		B63H21/21; B64C3/32; B64D29/02; H01M2220/20; H02P2101/45; Y10S903/902	pure green
4. Climate change mitigation technologies related to transportation	9	B60H1/00385; B60L2220/12; B60L2220/14; B60L2220/16; B60L2220/42; B60L2220/44; B60L2220/46; B60L2220/58	pure green
4. Climate change mitigation technologies related to transportation		B60L2240/12; B60L2240/34; B60L2240/36; B60L2260/16; B60L2260/46; B60L2260/50; B60L2270/32; B60L2270/34	pure green
4. Climate change mitigation technologies related to transportation		B60W2510/081; B60W2510/083; B60Y2200/92; B60Y2400/112; B60Y2400/114; B64C2201/042	pure green
4. Climate change mitigation technologies related to transportation	10	B60K6/32; B60L2240/16; B60L2240/18; B60L2240/20; B60L2240/421; B60L2240/423; B60L2240/425; B60L2240/429	pure green
4. Climate change mitigation technologies related to transportation		B60L2240/441; B60L2240/443; B60L2240/445; B60L2240/461; B60L2240/463; B60L2240/486; B60L2240/507; B60L2240/525	pure green
4. Climate change mitigation technologies related to transportation		B60L2240/526; B60L2240/527; B60L2240/529; B60L2240/545; B60L2240/547; B60L2240/549; B60W2510/244; B63H2021/207	pure green
5. Climate change mitigation technologies related to buildings	8	F24D2200/04	fuel efficiency
5. Climate change mitigation technologies related to buildings	8	E04B9/001; F24D11/002; F24D12/02; F25D2201/10; F25D23/06	unclassified
5. Climate change mitigation technologies related to buildings	9	F24F11/46; F24F12/002; F24F12/006	unclassified
5. Climate change mitigation technologies related to buildings	10	E04D13/1643; E04D13/1681; E05Y2400/452; F24H3/0405	unclassified
5. Climate change mitigation technologies related to buildings	8	F24D17/0005; F24D2200/12; F24D2200/14; F24F5/0046; F24H1/0018; F24H3/002; F27D17/004; Y10S315/07	pure green
5. Climate change mitigation technologies related to buildings	9	E06B2009/2476; F24D17/0063; F24H1/185	pure green
5. Climate change mitigation technologies related to buildings	11	E04C2/525	pure green
6. Climate change mitigation technologies related to wastewater treatment or waste management	8	Y10S588/90	pure green
7. Climate change mitigation technologies in the production or processing of goods	8	B60K15/01	fuel efficiency
7. Climate change mitigation technologies in the production or processing of goods	9	B60K15/04; G01M15/042; G01M15/06; G01M15/08	fuel efficiency

OECD-env tech Categories assigned	Classified CPC level	CPC codes	Category
7. Climate change mitigation technologies in the production or processing of goods	6	B32B2457/00; F28D2015/00	unclassified
7. Climate change mitigation technologies in the production or processing of goods	8	B65G15/60; F28D15/02; G05D1/0005; H03K19/0008; H03K2217/0036	unclassified
7. Climate change mitigation technologies in the production or processing of goods	9	B22D25/04; B29L2031/7146; F28D2021/0043; H03F2201/3215	unclassified
7. Climate change mitigation technologies in the production or processing of goods	10	B29D11/00817; G03F7/70433; G05B2219/25387; G05B2219/2639; G05D23/1923; G09G2330/023; H04B2201/70707	unclassified
7. Climate change mitigation technologies in the production or processing of goods	11	H04B1/1615; H04B2001/045	unclassified
7. Climate change mitigation technologies in the production or processing of goods	12	G05B23/0294	unclassified
7. Climate change mitigation technologies in the production or processing of goods	13	G09G3/2965	unclassified
7. Climate change mitigation technologies in the production or processing of goods	6	H02P15/00; H02P21/00; H02P31/00; H02P5/00; H05H1/00; H05H11/00; H05H13/00; H05H15/00	pure green
7. Climate change mitigation technologies in the production or processing of goods	8	F26B23/001; H02P2203/03; H02P2203/11; H02P2207/01; H02P2207/05; H02P23/14; H05H2242/20	pure green
7. Climate change mitigation technologies in the production or processing of goods	9	C01B2203/066; C04B2111/00853; F26B3/283; F26B3/30; H02P1/029; H02P1/04; H02P1/24; H02P1/46	pure green
7. Climate change mitigation technologies in the production or processing of goods	10	B60H1/143; H02P1/28; H02P1/30; H02P1/423	pure green
7. Climate change mitigation technologies in the production or processing of goods	11	C01B2203/0822	pure green
8. Climate change mitigation in information and communication technologies	8	A61B5/0002; G06F2119/06; G06F2119/08; H04L69/04	unclassified
8. Climate change mitigation in information and communication technologies	9	G06F2212/1028; G11C5/141	unclassified
8. Climate change mitigation in information and communication technologies	10	G06F2212/1044; G11B2005/0021; H01H2003/3057; H01H2003/3068; H01H2085/025; H01L27/301; H04L27/3405; H04M1/73	unclassified
8. Climate change mitigation in information and communication technologies		H04Q2209/886	unclassified
8. Climate change mitigation in information and communication technologies	11	H01L51/5028; H04L12/1886; H04L41/0833	unclassified
8. Climate change mitigation in information and communication technologies	12	H01L21/263	unclassified

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