Alliance for Industry Decarbonization

Implementation plan

Updated: 23 April 2024

1. Background and context

More than 190 countries have ratified the Paris Agreement to hold the increase in the global average temperature to well below 2°C above preindustrial levels and pursue efforts to limit the temperature increase to 1.5°C. There is an increasing call for carbon neutrality by 2050 by public and private players with over 130 countries as of end-2021 identified being at different stages of pursuing net-zero targets, or even passing the necessary legislation.

Drastic energy and process-related emission reductions are essential within this decade and net zero emissions by 2050 if we are to sustain the ecosystems and human race. According to the IPCC, pathways limiting global warming to 1.5°C with no or limited overshoot would require rapid and far-reaching transitions in energy, land, urban and infrastructure and industrial systems. These systems transitions are unprecedented in terms of scale and imply deep emissions reductions in all sectors, a broad portfolio of mitigation options and a significant upscaling of investments in those options.

Less than a decade is left to secure a fighting chance for a 1.5°C world, requiring multiple dimensions to maximise benefits and carefully manage adverse outcomes. To meet these commitments, the private sector should be part of the efforts to pivot from fossil fuels to renewable energy sources and pursue widespread decarbonisation of all end-use sectors, which would be as well a powerful equaliser in the world where disparities and gaps between communities, nations and regions continue to widen.

About 25% of global GDP is produced by the industrial sector, which also emits around 30% of GHG energy and process-related emissions.

The participation of leading industries can benefit business opportunities for green industrialization and highlights the importance of collaboration in developing strategies and sharing best practices to cut industry emissions.

2. Alliance for Industry Decarbonization – members and partners

Since its launch in 2022, the Alliance grew to 52 companies and 15 eco-system knowledge partners.

Members: Siemens Energy, Enel Green Power, TAQA Arabia, Eni, Technip Energies, EDF Renewables, JSW, Tata Steel, Sable Chemicals, Tatanga Energy, Repsol, Equinor, TAQA, OQ, KIS Group, VALE, ATC Development, Subsea7, El Sewedy Electric, FLSmidth, Envision, Alfanar, Zahid Group, Petronas, Ecopetrol, Unilever, Orbital Energy, Kent, Electrified Thermal Solutions, Engie, Lekela, Gulf Cryo, BXVentures, Bureau Veritas, KROHNE, Nuventura, Enova, SLB, HIF Global, Snam, Net Zero Think, APChemi, Aquatech, Xodus, ABB, ERM, Emirates Steel, ADNOC, GreenEarthX, Topsoe, HUAWEI and BASF.

Ecosystem partners: IRENA, Roland Berger, IEC, ISO, UNIDO, EURELECTRIC, IFC, Standard Chartered, TUV SUD, Mission Innovation, State of Green, Global Renewables Alliance, Emirates Development Bank, Net Zero Technology Centre, and Industrial Transition Accelerator.

The Alliance serves as a global platform for enhancing dialogue through exchange of insights, experiences, and best practices. The group focuses on five pillars and enablers: renewables, green hydrogen, bioenergy with carbon capture, utilisation and storage, human capital, and finance.

The Alliance is coordinated and facilitated by the IRENA, as host of the Secretariat.

3. Strategic directions, Mission and Objectives

3.1. Strategic directions

To effectively address current challenges on decarbonization, the members have agreed to establish the Alliance for Industry Decarbonization to contribute to the achievement of country-specific net-zero goals, foster action for decarbonization of industrial value chains, and enhance understanding of renewables-based solutions and their adoption by industry. The Bali Declaration adopted by the co-founding members on the 1st September 2022 stipulates that all members will collaborate under the Alliance to enhance dialogue and coordinated action among the members towards raising aspiration for decarbonization, aligned with global and national decarbonization ambitions. The members pledge to support development and implementation of decarbonization strategies as well as to stimulate exchange of knowledge and best practices among practitioners and engage with global and regional energy and climate platforms to foster action for decarbonization of end-use sectors, particularly, industry.

3.2. Alliance Objectives

The objectives of the Alliance are to enhance dialogue and coordinated action among the members towards:

- raising aspiration for decarbonization, aligned with global and national decarbonisation ambitions;

- supporting development and implementation of decarbonisation strategies, leveraging on renewable energies implementation;

- stimulating exchange of knowledge and best practices among practitioners; and

- engaging with global and regional energy and climate platforms to foster action for decarbonisation of end-use sectors, particularly, industry.
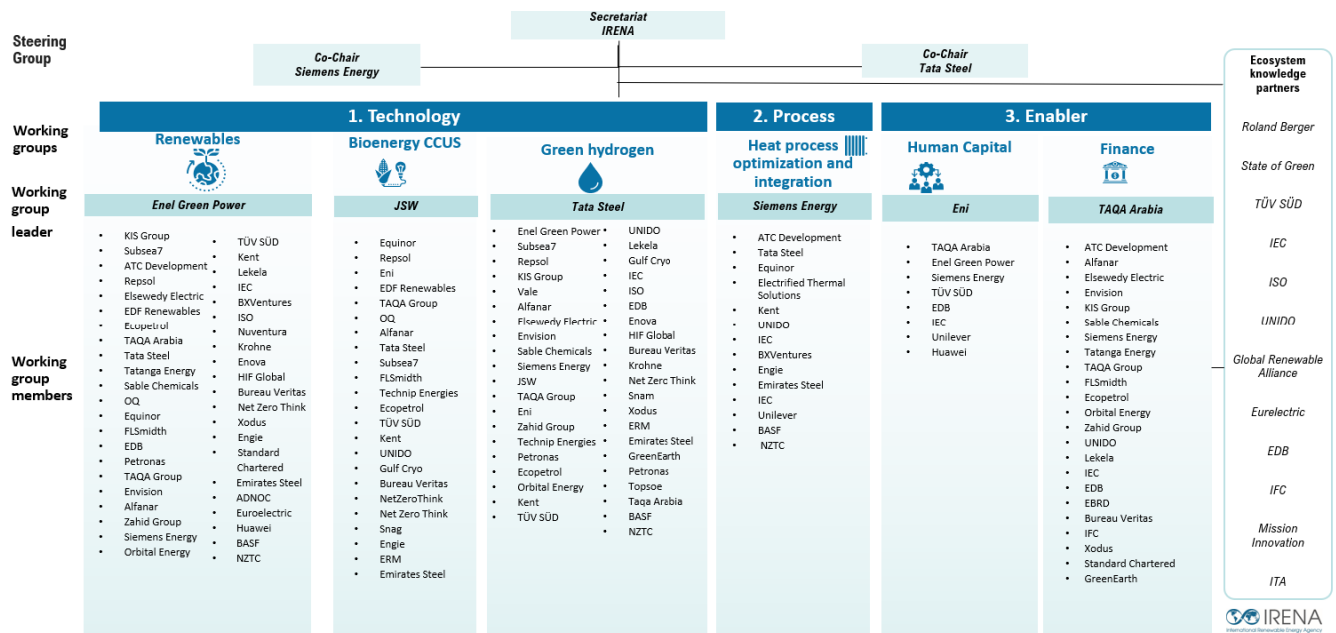
3.3. Alliance Mission Statement

The mission of the Alliance is to foster action for decarbonization of industrial value chains, promote understanding of renewables-based solutions and their adoption by industry with a view to contributing to country-specific net-zero goals.

4. Alliance governance and operational structure

The Alliance has its own governance structure, distinct from the policy-making organs and governance structure of IRENA and as described in sections below. Accordingly, in joining the Alliance, members acknowledge that any decision or action made by the Alliance shall not be regarded as made by or on behalf of any specific member of the Alliance, including IRENA and neither members of IRENA, nor any other member of the Alliance shall be held responsible or liable for any such decision or action. In addition, the views, findings and materials of the Alliance do not necessarily represent the views or policies of IRENA or its members. For the

avoidance of doubt, any reference to a "Member/s" or "member/s" reference to the members of the Alliance and not to IRENA's Members.

The Alliance consists of its members. The Steering Group serves as the executive body of the Alliance to support and oversee the operation of the Alliance. The Alliance also comprises Working Groups to ensure active participation by the Members to accomplish the Alliance's vision and mission. IRENA facilitates the work of the Alliance by acting as its Secretariat.

Steering Group: Secretariat IRENA; Co-Chair Siemens Energy; Co-Chair Tata Steel

Ecosystem knowledge partners: Roland Berger, State of Green, TÜV SÜD, IEC, ISO, UNIDO, Global Renewable Alliance, Eurelectric, EDB, IFC, Mission Innovation, ITA

1. Technology			2. Process	3. Enabler	
Renewables	Bioenergy CCUS	Green hydrogen	Heat process optimization and integration	Human Capital	Finance
Enel Green Power	**JSW**	**Tata Steel**	**Siemens Energy**	**Eni**	**TAQA Arabia**
KIS Group, Subsea7, ATC Development, Repsol, Elsewedy Electric, EDF Renewables, Ecopetrol, TAQA Arabia, Tata Steel, Tatanga Energy, Sable Chemicals, OQ, Equinor, FLSmidth, EDB, Petronas, TAQA Group, Envision, Alfanar, Zahid Group, Siemens Energy, Orbital Energy, TÜV SÜD, Kent, Lekela, IEC, BXVentures, ISO, Nuventura, Krohne, Enova, HIF Global, Bureau Veritas, Net Zero Think, Xodus, Engie, Standard Chartered, Emirates Steel, ADNOC, Euroelectric, Huawei, BASF, NZTC	Equinor, Repsol, Eni, EDF Renewables, TAQA Group, OQ, Alfanar, Tata Steel, Subsea7, FLSmidth, Technip Energies, Ecopetrol, TÜV SÜD, Kent, UNIDO, Gulf Cryo, Bureau Veritas, NetZeroThink, Net Zero Think, Snag, Engie, ERM, Emirates Steel	Enel Green Power, Subsea7, Repsol, KIS Group, Vale, Alfanar, Elsewedy Electric, Envision, Sable Chemicals, Siemens Energy, JSW, TAQA Group, Eni, Zahid Group, Technip Energies, Petronas, Ecopetrol, Orbital Energy, Kent, TÜV SÜD, UNIDO, Lekela, Gulf Cryo, IEC, ISO, EDB, Enova, HIF Global, Bureau Veritas, Krohne, Net Zerc Think, Snam, Xodus, ERM, Emirates Steel, GreenEarth, Petronas, Topsoe, Taqa Arabia, BASF, NZTC	ATC Development, Tata Steel, Equinor, Electrified Thermal Solutions, Kent, UNIDO, IEC, BXVentures, Engie, Emirates Steel, IEC, Unilever, BASF, NZTC	TAQA Arabia, Enel Green Power, Siemens Energy, TÜV SÜD, EDB, IEC, Unilever, Huawei	ATC Development, Alfanar, Elsewedy Electric, Envision, KIS Group, Sable Chemicals, Siemens Energy, Tatanga Energy, TAQA Group, FLSmidth, Ecopetrol, Orbital Energy, Zahid Group, UNIDO, Lekela, IEC, EDB, EBRD, Bureau Veritas, IFC, Xodus, Standard Chartered, GreenEarth

IRENA
International Renewable Energy Agency

Note: The Alliance structure to be updated as more new members are expected to join the Working Groups and as ecosystem knowledge partners.

4.1.   The Secretariat – the role of IRENA

The role of IRENA in the Alliance, in acting as the Secretariat and the Knowledge Partner of the Alliance, is as follows:

- the host of the Secretariat of the Alliance to coordinate and facilitate its activities in close dialogue and coordination with the members;

- holds a permanent seat in the Steering Group;

- chairs the Steering Group and coordinates the Annual Strategy Meeting and the quarterly meetings of the Steering Group;

- collects proposals from members for the establishment of Working Groups and brings them to the attention of the Steering Group, together with its recommendations thereon;

- collects applications to join the Alliance and presents these to the Steering Group, together with its recommendations thereon;

- coordinates the contributions of the Alliance relevant to IRENA's work;

- as a depositary of knowledge may provide technical knowledge and global best practices, lead or contribute to specific activities of the Alliance, depending on the availability of resources and in accordance with IRENA's respective Work Programme and other applicable rules, regulations and policies. The Alliance activities led or

contributed by IRENA are expected to be funded through voluntary contributions to IRENA which could be provided by IRENA's Members and/or members of the Alliance;

- IRENA may support the Alliance with different knowledge products.
- IRENA offers access to its existing digital platforms (open to public), such as:
  - ✓ IRENA Global Atlas and Bioenergy Simulator (web-based platform that provides users with data and tools to assess their renewable energy potential)
  - ✓ IRENA SolarCity (open to public) (simulator that combines ultra-high-resolution 3D building footprints with solar irradiation data, computed at 1 meter grid cells).

The members of the Alliance may be invited, at IRENA's sole discretion, to participate at IRENA events such as a biennial IRENA Innovation Week and IRENA Innovation Days and to peer-review IRENA reports. Participation in the events shall be subject to IRENA's applicable regulations, rules and policies.

4.2. Alliance membership and knowledge partners

The Alliance is open for members and eco-system knowledge partners to any legal entity engaged in decarbonizing the industry based on renewable energy solutions. This can include but is not limited to public or private sector industrial firms, industry associations, international initiatives, financial community, intergovernmental organizations.

4.2.1. Requirements to be a member of the Alliance

Endeavours - Industry members

Industry partners are public/private firms and stakeholders operating in energy-intensive sectors (such as energy, fertiliser, aluminium, cement, iron and steel, refinery and mining) that have the ambition to decarbonise their activities along their value chains.

Priority will be given to industrial stakeholders of the countries with existing national decarbonisation/net zero goals and strategies, as well as those stakeholders with clear commitment/strategy for the decarbonisation of their operations.

Their efforts should be quantifiable and publicly demonstrated, being role models for their industry stakeholders to decarbonise their operations and creating a sustainable ecosystem for their peers.

Enablers - Technology members

The enablers of the Alliance will be those entities that have expertise in the deployment of energy transition technologies and are prepared to share their knowledge and experience to support the efforts of industry partners in the design and implementation of their decarbonisation activities.

Considering the scale and diversity of the challenges at stake, the Alliance membership benefits from a large variety of viewpoints and experiences.

General requirement to be a member

The following criteria shall be met to become and remain a member of the Alliance:

- Applications for membership of the Alliance shall be considered on the basis of whether the applying entity's objectives are compatible with those of the Alliance, as well as whether the entity supports the overall vision and mission of the Alliance;

- supporting development and implementation of its decarbonisation strategy;

- Once approved, members are required to take suitable measures to support the activities of the Alliance, including through the allocation of resources needed to implement the Alliance activities;

- members are encouraged to actively communicate about their membership in the Alliance in appropriate ways, such as through the display of the Alliance logo on the Member's website in accordance with section 6 below*;*

- members agree that, with respect to any activities they undertake in the context of the Alliance, they shall be subject to the terms of this document;

- members are expected to join at least one working group members acknowledge that neither the Alliance nor IRENA or their respective members shall assume any responsibility or liability in connection with the activities of the Alliance members, its personnel, partners, and contractors, as a result of its membership in the Alliance or the rights being granted herein;

- In particular, members shall ensure compliance with all applicable laws and regulations.

4.2.2. Membership application process

Any entity wishing to become a member of the Alliance shall submit a membership application form to IRENA, as available on the Alliance's website. The entity shall also undertake to support the Alliance vision and mission and to comply with this document.

Upon receipt of the application form, IRENA shall review the application and communicate a recommendation to the Steering Group on whether the applicant should be accepted as a new member of the Alliance. In case no objection is received within five working days, the membership request is deemed to be approved.

4.2.3. Membership withdrawal process

A member may discontinue its participation in the Alliance at any time by providing 30 days prior written notice to IRENA.

Membership may also be withdrawn based on a two-thirds majority decision of the Steering Group following the submission of a recommendation for withdrawal by one or more Members. The basis for termination is normally that a member is not in compliance with the vision and/or the mission of the Alliance, the criteria for and/or requirements of membership, or is otherwise conducting itself in a manner considered inappropriate to continue as a member. The Steering Group will decide on membership withdrawal on the basis of the above-mentioned submission. The Steering Group's decision for a membership withdrawal shall result in immediate suspension of the membership of the concerned Member.

4.2.4. Roles of members

The Alliance members must actively contribute to the activities of the Alliance and its working groups.

They may provide technical, financial, personnel or other assistance to the Alliance or to the working groups, as needed.

4.3. Steering Group

The Steering Group serves as the executive body of the Alliance through providing guidance for and roles ensuring oversight of the implementation of Alliance activities. The Steering Group is responsible for deciding on membership of the Alliance; establishment of new Working Groups; appointment of Working Group Leaders. It is also responsible for reviewing and assessing the work undertaken by the Working Groups to determine whether each Working Group should remain active.

The Steering Group is composed of the Secretariat, the Co-Chairs and other member/partner that the Secretariat and Co-Chairs might appoint.

4.4. Co-Chairs

The Co-Chairs are selected among members of the Alliance will sit in the Steering Group. They are appointed by IRENA for the duration of 2 years, on a rotational basis. They represent the Alliance and have representative functions, also externally e.g. for communication purposes. They have the responsibility to ensure that the Alliance action plans of Working Groups are implemented and the right of to review members' activities. Starting from September 1st 2022 Siemens Energy and Tata Steel took over the role of the Alliance Co-Chairs. After expiration of 2 years both Co-Chairs in alignment with IRENA will agree on the successor co-chairs.

4.5. Ecosystem knowledge partners

Ecosystem Knowledge Partner role shall effectively support the Alliance by sharing knowledge and best practices. Collaboration with a broad range of ecosystem knowledge partners will support the Alliance with diverse expertise, technical and strategic advice. Ecosystem Knowledge Partner could be invited to be a member of the Steering Group.

4.6. Working Groups

The current working groups as presented in section 4 have been established in close consultation with the members.

The establishment of a new working group can be proposed by any member(s) to the Steering Group for approval using the working group Submission Form, as available on the website of the Alliance. Upon receipt of a proposal for a new working group, IRENA shall review the proposal and its attached work plan against the following: relevance to the vision and mission of the Alliance, quality of the proposal, and appropriate allocation of resources to achieve its stated objectives. After this initial reviewing/screening process, in close dialogue with the member(s) that submitted the proposal, IRENA makes a recommendation to the Steering Group which, which takes the final decision on whether to approve the working group.

A working group may voluntarily be established on an ad-hoc basis to be engaged in any topic of relevance to the Alliance. A working group is defined by its scope, concrete objectives, required level of commitment in terms of resources, use of communication channels, governance and precise deliverables. A working group should involve the participation of a minimum of three members and any member may join any existing working group at any point.

The working group Leads are nominated by a/the member(s) of the relevant working group or self-nominated and approved by the Steering Group. The Leads approved by the Steering Group for the duration of 2 years, on a rotational basis, and might be extended. The working group Lead's role is to coordinate and organize the work of the relevant group and to report its

progress at Steering Group meetings when invited to do so by the Secretariat of the Alliance. If the results are unsatisfactory or no progress can be reported, the Steering Group may decide to discontinue the Working Group.

Any member considering to join any working group must comply with the group's commitments in terms of human resources, use of communication channels and precise deliverables.
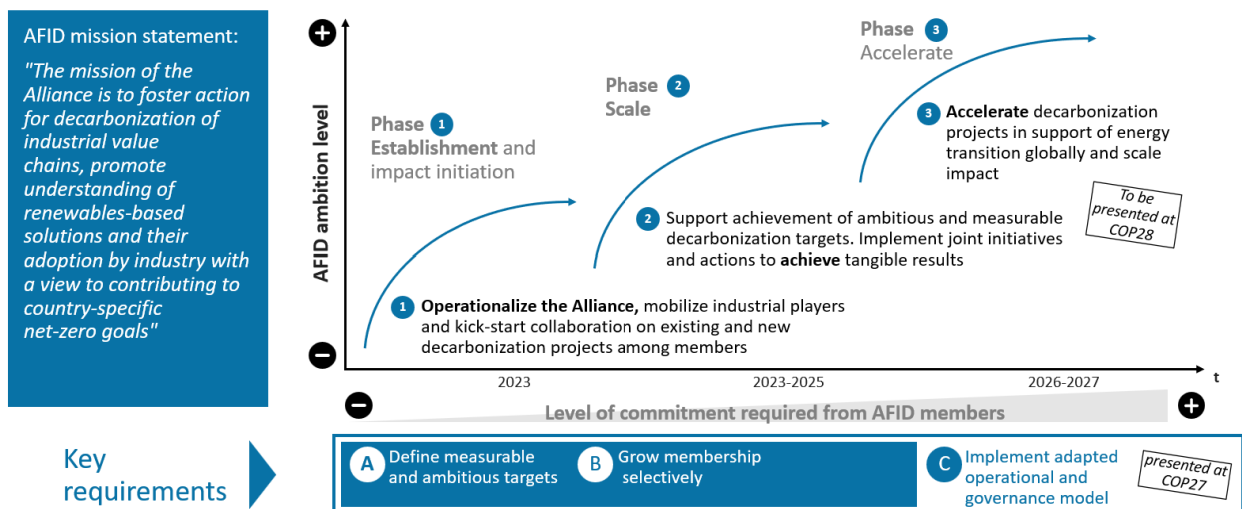
The respective Leader of the working groups may be appointed to the Steering Group if they indicate an interest and willingness to also serve on the Steering Group.

5. Implementation Plan

5.1. Strategy and priorities

The Alliance will (i) support industrial partners who set aspirational goals aligned with global and national decarbonisation ambitions; (ii) support interested industrial partners in the development and implementation of decarbonisation strategies; (iii) stimulate exchange of knowledge and best practices among practitioners; and (iv) engage with global and regional energy and climate platforms to foster action for end-use decarbonisation of end-use sectors, particularly, industry.

The development strategy of the Alliance is structured along 3 phases.

The following scope of priority actions developed in line with the Alliance is endorsed by all members and partners of the Alliance and include but are not limited to:

- **Knowledge sharing:** The Alliance will support IRENA in providing transparent and reliable data on the cost and performance of implemented decarbonization projects;

- **Global network development:** The Alliance agrees to establish and improve a robust global network of decarbonization experts building upon existing networks and create an available pool of experts specialized in decarbonization solutions;

- **Joint initiatives:** Joint development activities and other strategy implementation measures such tools development, trainings, skills enhancement programmes, studies, ect.;
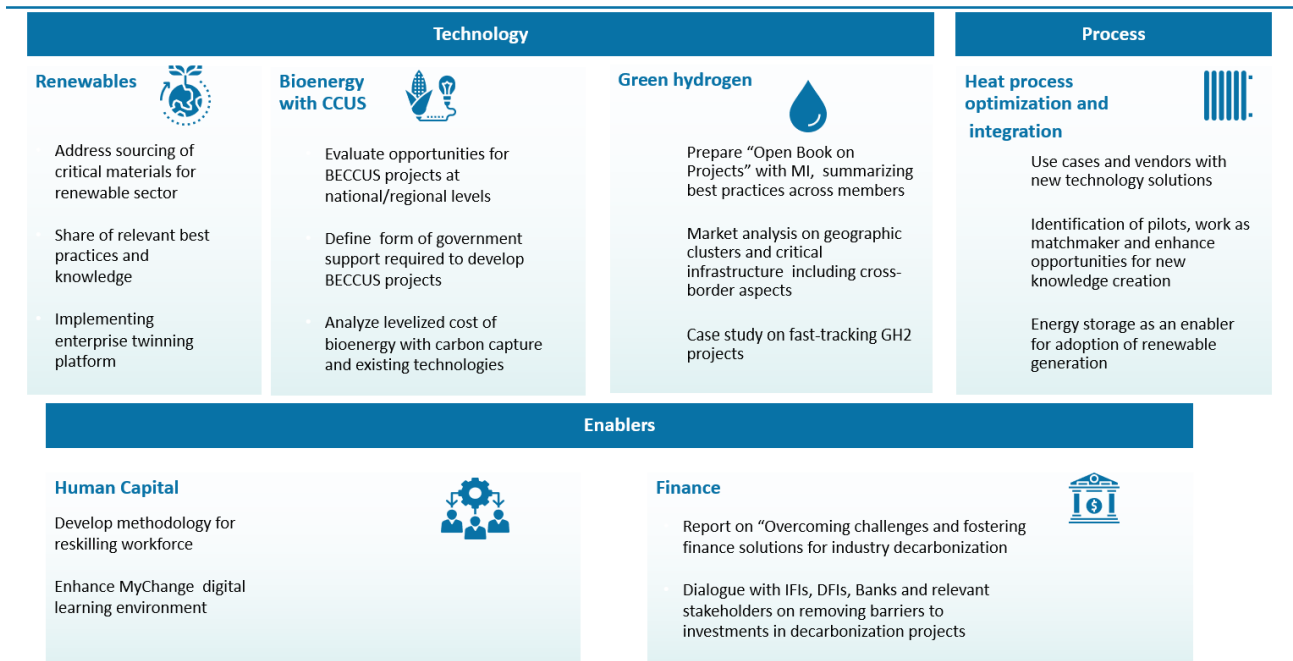
- **Regulatory & incentive recommendation:** The Alliance will maintain a dialogue with governments on energy policy priorities and regulatory and institutional frameworks. Further actions include collaboration with ISO and IEC on certification systems and technical and safety standards;

- **Investment support:** The Alliance will collaborate on promoting access to finance for promising decarbonization solutions for industrial sectors, propose improvements to targeted financing mechanisms and engage in a regular dialogue with the relevant financing organizations to explore efficient ways to jointly support innovative projects going beyond the state-of-the-art;

- **Tools:** The Alliance will support the creation of tools easing decarbonization for industrials such as. Build an Industrial Processes decarbonization technology platform in the form of blueprints per industrial segment/sector utilizing current deployable or close to-deployment technologies. Upon completion the tools will be open to public access to facilitate their use within the industry;

Following the establishment of the Alliance, six working groups are created in alignment with the Alliance Members, covering key dimensions of industry decarbonization.

- **Renewable energy technologies**: Share knowledge and experiences on technologies and infrastructure to enable utilization of large-scale deployment of renewables;

- **Bioenergy with CCUS**: share knowledge and experiences on bioenergy with carbon capture and storage;

- **Green Hydrogen technology**: facilitate ecosystem for H2 with focus on establishment offtake and development agreement to enable large-scale use;

- **Heat process optimization and integration**: Develop a framework to enable an accelerated implementation for heat process optimization and heat integration measures;

- **Human Capital**: Collaboration to train, upskill and provide human capital to enable successful implementation of decarbonization plans;

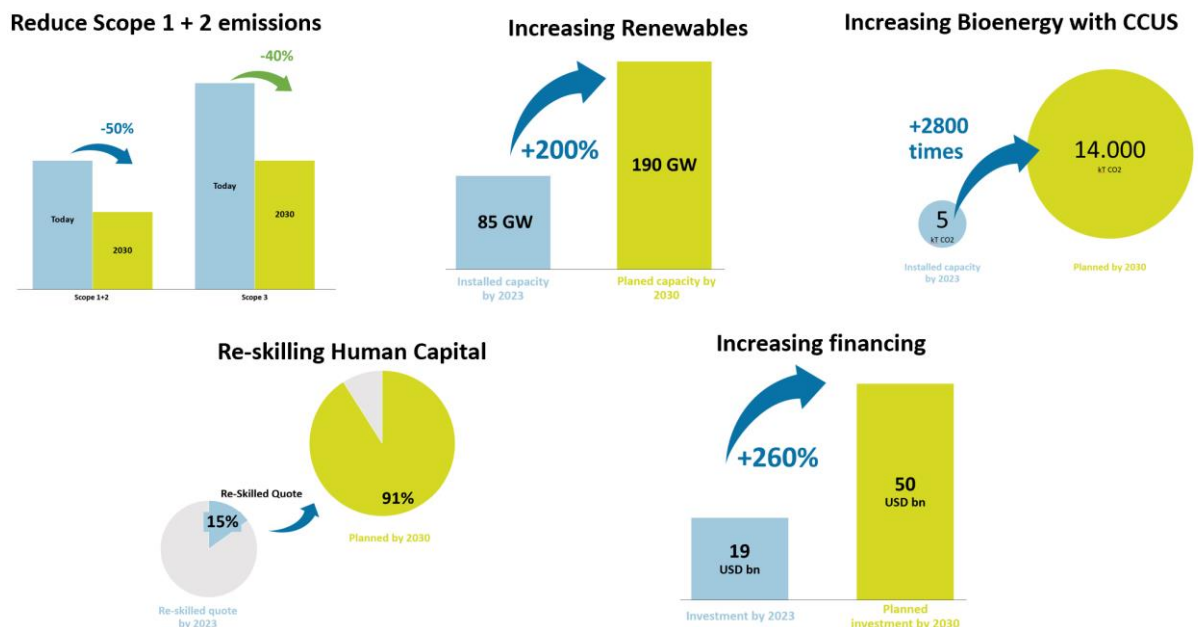- **Finance**: Promote access to finance for new decarbonization technologies.

5.2. Action plan

The Alliance has been working on wide range of joint initiatives defined by the 6 working groups aimed at addressing key decarbonization challenges. AFID plan of actions for 2024 is presented below.

5.3. Decarbonization Commitment and joint targets

AFID members endorsed Decarbonization Commitment with joint targets 2030 at 2nd CEO roundtable at COP28 on 5 December 2023.

The members committed to review the Joint Achievements and Targets on an annual basis and report on progress.

5.4. Joint initiative selection criteria

Proposals for the above joint initiatives went through a screening process considering the following criteria:

- Commitments: Clear indication of the interest of the organization in technical assistance in the context of the agreed objectives of the Alliance;

- Near-term Impacts: The likelihood that supported measures will contribute to a near term improvement of framework conditions for the active decarbonization of industries;

- Long-term Sustainability: The likelihood that the Alliance assistance will lead to sustained impacts on strengthening decarbonization efforts and results;

- Replicability: The potential for Alliance activities to be replicated in other regions or institutions.

5.5. Implementation modalities

- Alliance members are not required to contribute a membership fee;

- Alliance members may support IRENA in its function as the Secretariat of the Alliance by providing, if required, staffing either through loan of experts, personnel, knowledge, logistical support or otherwise;

- Alliance members and partners will bear the logistical costs associated with coordination activities, such as meetings of the Steering Group and other working groups of the Alliance;

- Three months following the establishment of a working group, the working group leader must submit to the Steering Group the yearly action plan for final approval, including: Working Group's scope, concrete objectives, required level of members' commitment in terms of resources, use of communication channels, governance, precise deliverables and key meetings. The action plan of each working group is updated in 1st quarter on annual basis.

- Three types of meetings will take place: yearly management meeting with representation of company CEO / DG / Board Member, quarterly steering group meetings with representation of IRENA and co-chairs appointed staff, quarterly working group meetings. The chart below shall act as a reference point and be indicative of the schedule that the Alliance will take;

- The dates, format and location of the different working groups monthly meetings must be defined by each working group individually. Working group leaders must coordinate meetings and inform the Alliance Steering Group of the date, location and agenda of the working group's meetings.

It is planned that WG monthly meetings are virtual.

Thematic meetings and CEO Roundtable conducted within COPs are in person.

The AFID conducts decarbonization sessions within global events through the year.

Ecosystem knowledge partners will be invited to regular meetings of the Alliance subject to their interest. The Alliance-Government dialog will be organized on as needed basis.

5.6. Monitoring tool and evaluation criteria

The Steering Group will monitor the progress of the Alliance activities through a set of monitoring and evaluation criteria. The criteria might be defined and updated by the Steering Group as required.

The first set of monitoring tools and criteria includes the following:

- Quarterly Steering Group meetings;

- Yearly management meeting;

- Monthly working groups meetings;

- A clear and tangible definition of objectives and action plans by working groups;

- Working groups' adherence to action plans and achievement of deliverables;

- Working groups' progress on reports and deliverables.

A successful evaluation will be dependent on the above-mentioned criteria and the achievements of the deliverables by the working groups.

6. Permitted use of the Alliance name and logo

Each member of the Alliance shall have the right and is encouraged to use the established name and emblem (logo) of the Alliance on its website, on the condition that these are employed solely for identifying the entity as being a member of the Alliance. Any other use of the name and emblem (logo) of the Alliance, including on communication materials or other documents produced in relation to the Member's activities with respect to the Alliance, shall be subject to the express consent of the Steering Group.

Any request for such use shall be submitted in writing to the Steering Group through IRENA.

The member acknowledges and undertakes that:

- Any permitted use of the name and emblem (logo) of the Alliance does not entail any legal or financial obligation for the Alliance or IRENA;

- The member shall hold harmless and defend IRENA, the Alliance, and their respective members against any action that may be brought against them as a result of the use by the Alliance member of the name or emblem (logo) of the Alliance;

- The name and emblem (logo) of the Alliance shall not be used for commercial transactions or in connection with objectives or activities not directly associated with the Alliance Member's membership of the Alliance, or in a way to imply or suggest endorsement or promotion of the Alliance Member's projects, products or activities or any other unrelated activity;

- The Alliance's logo shall be used unaltered;

- Nothing in this document shall be construed as the granting of any right by IRENA of the use of the IRENA name, abbreviation, or emblem (logo) by any Alliance member, which shall be subject to the express written authorisation of IRENA; and

- The right that has been granted herein to each member to use the Alliance's name and logo may be withdrawn at any time at the sole discretion of the Steering Group including but not limited to any use of the name or logo of the Alliance that is in breach of this document.

7. Alliance resources

IRENA's resources for the Alliance consist solely of staff time commitments and basic operating costs as approved in its biannual Work Programme.

Each member of the Alliance may, at its discretion, undertake to contribute resources to the Alliance subject to the regulations, rules and procedures of the member. Any costs directly incurred by a member arising from its participation in the Alliance are to be borne by the member that incurs them

8. Amendment of this document

This document may be amended at any time by a decision of the Steering Group. Such a decision may be taken either as a result of deliberations undertaken during the Annual Steering Group Meeting and/or based on a recommendation submitted to the Steering Group by the members.