

# #Hack4Climate Innovation Program

## Primer, 05/2018



### Overview

#Hack4Climate was initiated by the Zurich-based Cleantech21 Foundation (C21<sup>1</sup>) in early 2017. Based on the success of the #Hack4Climate preparatory [workshops](#) (held in 17 technology centres on 6 continents) and the [first ever hackathon](#) held at a COP climate conference<sup>2</sup> (note the ‘after-movie’), C21 has defined the #Hack4Climate Innovation Program (H4C) for the period 2018-2022.

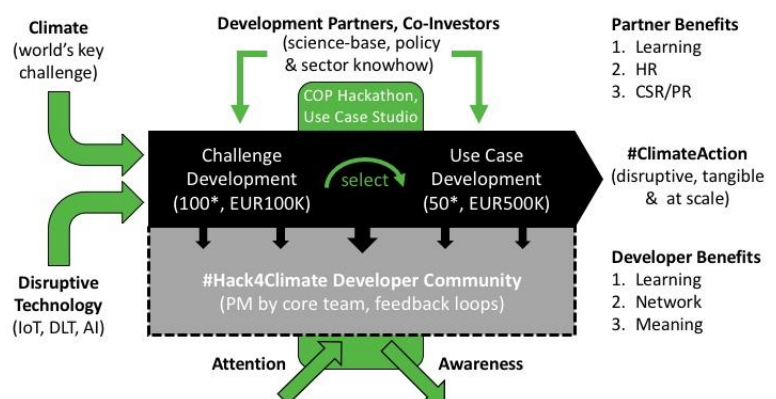
The main H4C-objective is to spur innovation leading to solutions for disruptive and tangible #ClimateAction<sup>3</sup>. Given the scale of the climate-task ahead and the limited time left, the underlying logic is simple: Only with far reaching (‘disruptive’) innovation will the world be able to achieve its climate targets<sup>4</sup>.

### Innovation Approach

H4C accelerates innovation at the intersection of climate and three key [disruptive technologies](#): (1) Internet of Things (IoT), (2) Distributed Ledgers (DLT, ‘Blockchain’), and (3) Artificial Intelligence (AI).

The program consists of two main tracks: (I) Challenge Development and (II) Use Case Development. A high profile yearly hackathon and use case studio event (with official [UNFCCC](#) and [Connect4Climate](#)/World Bank partnership) during COP climate conferences serves as an anchor for both tracks, selecting the winning teams, convening expert-feedback, attracting attention, and raising awareness. H4C selectively participates in third party events to showcase use cases. It will remain strictly platform independent/technology neutral.

With 100 challenges and 50 use cases in 5 years, H4C is designed to identify and scale disruptive solutions for #ClimateAction. A lean operational team formulates engagement priority areas, maintains on- and off-line cooperation infrastructure, and links the industry and policy knowhow of partners with the H4C developer community as part of a dynamic, open-innovation process.



The H4C approach allows for both, actively developed projects as well as submissions of challenges and use cases by third parties. The target is to weigh equally both types of developments, and to provide a co-creation environment that allows both hackers/experts (‘developers’) and partners to review and feedback, engage in, and support challenges and use cases.

### Engagement Focus

H4C’s team performs continuous research and cooperates with selected research partners in order to define the most high-potential [Engagement Areas](#). For this, a focus-framework is applied, consisting of focus industries and cross-industry focus topics.

For this, H4C partners with established organisations offering science-based analysis on climate impact, such as the [Stockholm Resilience Institute](#), [Mission2020](#), [Project Draw Down](#), and [WWF](#). To formulate new

1 [C21](#) is a Swiss not-for-profit foundation with a 10 year track record of advocacy and innovation activities.  
2 COPs (conferences of the parties) are the [UNFCCC’s](#) main yearly climate conferences, attracting approx. 30’000 high-level delegates from governments, businesses, and NGOs. H4C held its first hackathon at [COP23](#) in Bonn/Germany, 11/2017.  
3 #ClimateAction is defined here as the honest pursuit of climate targets, incl. climate mitigation, adaptation and finance.  
4 Climate targets are defined here as being those set by the [Paris Agreement](#), and the reduction scenarios derived by [IPCC’s](#) science-base. Specific reduction pathways followed are those set by [Mission2020](#) and the [Global Carbon Law](#).

challenges, H4C works with leading universities (such as [ETH](#), [MIT](#), [Tsing Hua](#), [LSE](#) and [Stanford](#)), tying-in ongoing research efforts and attracting talent by way of thematic competitions.

Specific challenges and use cases are selected based on an [Analysis Matrix](#) consisting of (1) Scalability (climate/emission impact, operational model), (2) Role/Gap (other players, inter-provider role), (3) Regulatory Feasibility, and (4) Technical Feasibility.

## Challenge Development

On the basis of H4C's Engagement Areas, specific challenges are defined in cooperation with corporate and NGO partners, as well as selected from submissions. For each challenge, H4C makes available a budget of approx. EUR100K, allowing for paid research and initial development work by members of its developer community. In return, H4C secures a first-right for continued development as use case.

Challenges are refined in an iterative, co-creation process involving developers and partners. Challenges are project-managed by a dedicated H4C team member with 0.25 FTE per challenge. This co-creation process is highly efficient, allowing for both rapid feedback from diverse community development resources as well as the inclusion of deep industry/topical knowhow from the participating partners, who may also contribute by way of data/API-access, soft- and hardware.

The challenge development process runs for the 12 months between each COP event, with fixed deadlines for final challenge-definition and hackathon participant-selection. Hackers/experts apply by indicating their challenge preference. A total of 20 challenges and 100 hackers are selected for each 5-day COP event. At the event, teams meet and work together to further their challenge – whereby H4C presents them with a specific development task to be addressed as part of the main hackathon competition, running alongside capacity building and network activities. The best teams/challenges are selected as use cases, based on the assessment of the hackathon jury as well as analysis by the H4C team and selected experts.

## Use Case Development

Use Case Development is an 18-month acceleration program for the winning challenge-teams as well as selected use cases submitted by third parties. In total, 10 new use case developments are supported each year. A core team of approx. 5 developers is financed for the 18-month period, in order to be able to fully focus on advancing their use case. An additional budget of an approx. equivalent amount is provided to the core team for engaging further development capacity from the H4C developer community and for financing soft- and hardware as well as for covering expenses.

Each use case is coached by an H4C team member, with 0.5 FTE - actively enabling and maintaining partner- and pilot-access. In total, use cases are financed with approx. EUR1m, 50% provided by H4C, and 50% invested by development partners. Collectively, they thereby secure an approx. 50% ownership right in the use case, as well as first rights in further financing rounds.

Following the first 12 months of use case development, teams take part in the COP-event and present in the use case studio, which takes place alongside the challenge hackathon. This allows high level input from experts and exposure with potential cooperation partners for each use case (e.g. for pilot implementations).

In the 6-month period following the COP-event, use cases are refined on the basis of the feedback received and the pilot- and new partnership-opportunities emerging. And they are specifically supported for spin-off and rapid implementation post H4C, including follow-on investment (approx. EUR1.5m, EUR10m valuation).

## Developer Community & USP

The core H4C value driver is the growing global [community](#) of talented and motivated IoT/DLT/AI-developers. H4C has a unique way of engaging sought after developer talent by offering meaningful projects, unique exposure with partners, and leading international peers. It enables developers to become part of



tangible solutions addressing climate change, the world's key challenge, and provides them with policy and industry knowhow.

The community includes three types of members: (1) H4C ambassadors (selected event participants, with outstanding technical and human potential as well as network following), (2) full community members (event participants), and (3) associated members (invited/selected to join the community, but not yet having been selected for participation at an H4C event). The community is continually enlarged, by way of local ambassador activities, competitions held for advancing and gaining knowledge in key domains, and cooperation with selected third-party hackathons.



### Affiliate Partner & USP

H4C runs an affiliate program for innovation partners (companies, NGOs, foundations) and impact investors (individuals, funds). Partners provide H4C with access to industry/topical knowhow, pilot opportunities, data and technology, as well as finance. In return, affiliates obtain access to the H4C community, the possibility to propose challenges and use cases, participate in their development, as well as attend COP-events.

Partners benefit from their H4C participation through (1) learning from interaction with the ideation/prototyping process, (2) access to human resources (intrinsically motivated, top-talent pool), (3) quality PR exposure (during COP events as well as continually in the community), and (4) tangible CSR/impact.

### Finance & Roll-out

HE4's total development budget amounts to EUR65m for the 5-year period. Additional project funding is sourced from affiliate partners. Developments to date have been financed by C21, selected impact investors/advisors, and the [ClimateWorks](#) foundation. Following the 2017 hackathon at COP23, H4C currently supports 6 use cases (such as [GainForest](#)) and prepares for its next event at [COP24](#), taking place in Katowice/Poland, 09-13/12/2018. Project funding is sourced from additional grants, strategic partners, and through the affiliate program.

In the medium term, provided continued community and partner backing, H4C plans an impact token offering (TGE) through a dedicated H4C foundation. As part of this, C21 shall transfer all H4C rights to the new foundation. The impact token issued by that foundation shall represent an impact investment opportunity for a large number of investors (democratising participation). The token represents ownership rights to H4C's use cases, as well as first rights for investment in subsequent financing rounds (incl. pre-sales in their own TGEs). In addition, the token shall allow H4C to compensate developers and represents the basis for an independent ecosystem to emerge once H4C's 5-year operating period will have come to end.

Already with its 2017 activities, H4C has proven impact. It spurred several new initiatives (e.g. [Blockchain & AI at ETH Zurich](#)) and has [attracted](#) some of the world's leading companies, foundations, and universities.



With its unique track, formal partnerships and use cases, H4C has the potential to develop into one of the most relevant innovation acceleration initiatives in the climate space. The combination of its thriving community of developers, policy access, and the industry knowhow of its partners, bears strong potential for tangible and scalable #ClimateAction as well as commercial success. Addressing the world's key challenge with disruptive technologies as part of a modern, open-innovation format is both a needed and a winning impact investment case.