Intellectual Property Strategy Transforming Mobility Towards Sustainability: An Environment Impact Case Study of Ather Energy

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About Ather Energy

IPACST
Intellectual Property Models for Accelerating Sustainability Transitions
www.ip4sustainability.org

Source: https://en.wikipedia.org/wiki/File:Ather_450X_.jpg

Business Profile - Ather Energy manufactures innovative Internet of Things (IoT) based intelligent two-wheeler electric scooters and builds a supportive e-mobility ecosystem in India.

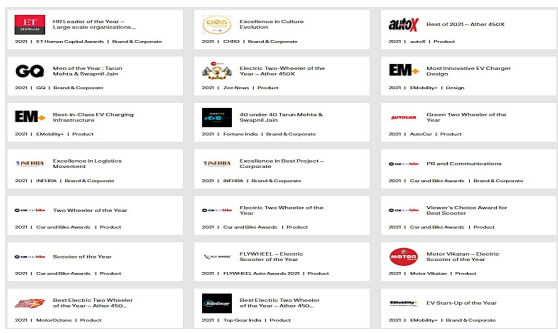
https://en.wikipedia.org/wiki/File:AtherLogo.jpg

An institute spin-off turned India' leading Electric Vehicle (EV) manufacturer, Ather Energy, was founded in 2013 by two engineering graduates to transform India‘s automobile sector towards environmental sustainability. The company built its prototype of EV two-wheeler in 2016 at the Indian Institute of Technology - Madras Incubation Cell and has evolved to building its most extensive e-mobility infrastructure and ecosystem around charging, supply-chain, customer service across the country. Building on its intellectual capital (60+ patent applications, 110+ trademarks and 130+ design rights), human capital (800+ employees with 14% female employees), financial capital (90+ million USD raised), and operational efficiency, the company has created an environmental impact by saving 7.5 metric tons of CO2 emissions.

Source: https://assets.atherenergy.com/Ather_Energy's_Impact_Report_2020.pdf

Sustainable Business Model (SBM) - Ather Energy's fundamental value proposition lies in reduced upfront cost and seamless experience of riding a sustainable energy-based, efficient, and IoT based e-vehicle and building an e-mobility ecosystem. It adopts a combination of (a) maximizing efficiency (SBM-1) and (b) deliver functionality rather than ownership (SBM-4) business models. Value creation of energy-efficient, long-lasting lithium-ion battery packs comes through vertical integration and partnerships. The company delivers and captures value through leasing and subscription schemes, ensuring affordability, reduced upfront cost, regular maintenance, and increased customer relations with the user, thus increasing the adoption of e-vehicle in the Indian population. The company has recently adopted the closing resource loop (SBM-2) business model. It offers replacement or buyback of the battery after three years or once it reaches 70% of its capacity. It ensures safe disposal, end-of-life recycling, and reusing the vehicle's lithium-ion batteries for secondary applications.

https://brifly-media.s3.ap-south-1.amazonaws.com/s3fs-public/styles/fb_1200x630/public/article/2021-11/Ather%27s%20New%20Plant.png?itok=BKEKsfD0



Source: https://www.pinterest.co.uk/pin/206250857907956833/

Awards and Honours - The company is awarded for its breakthrough design, innovation, and best-in-class IP and HR practices. In 2020, Niti Ayog, Government of India, awarded Ather Energy with the IPR leadership award for excellent contribution in the field of patents. In 2021, UK-Based Clarivate recognized Ather Energy as one of the top investors in south and southeast Asia. EMobility+ awarded the company for the most innovative EV charger design and best-in-class EV charging infrastructure awards in the same year. During 2016-2020, the company was awarded several times for its best HR practices, design and innovation, and for promoting sustainability and development in the company and socially.

Source: https://press.atherenergy.com/awards-honours/

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Ather Energy's IP asset portfolio

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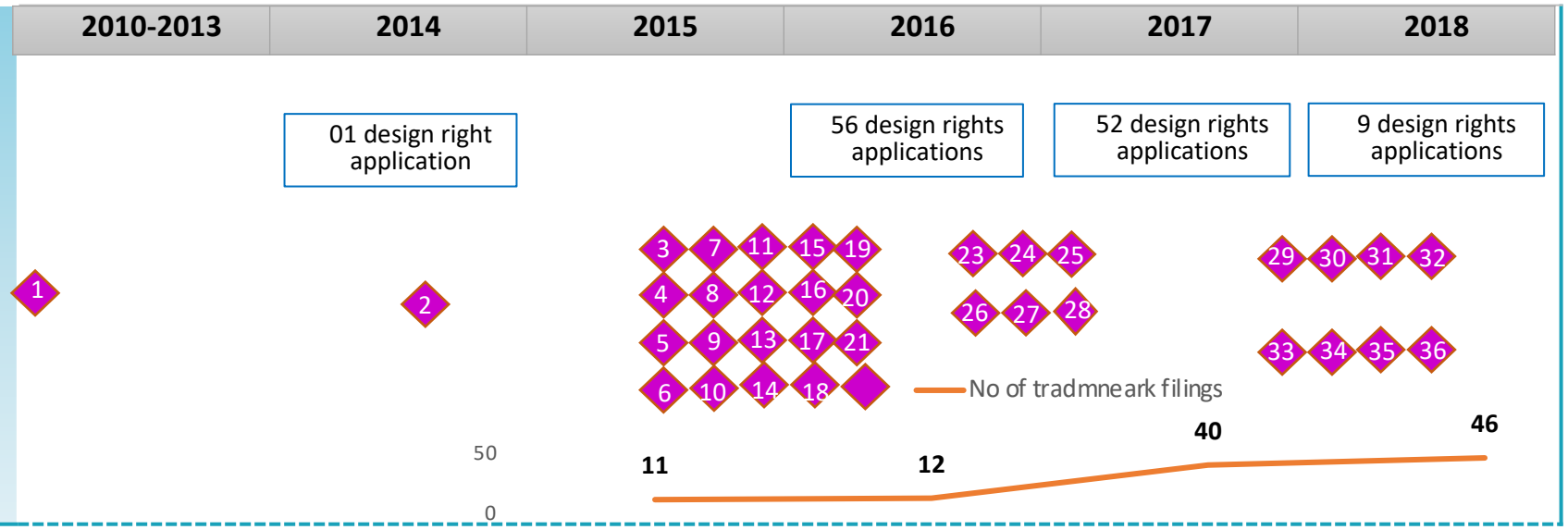
Patents, design rights and trademark filings

Important IP assets

Internally generated and fully owned IP



1 Patent applications

Trade-secrets
Algorithms, software and firmware

Data
Machine and vehicle data generated by the embedded software

Trademark portfolio

Logo

ATHER DOT™ | 450 | ATHER HOMEGRID | ATHER GRID
ATHER GRID | GRID | | ATHER SPACE
| ATHER | ATHER GRIDPOINT | ATHER

Wordmark

Ather	Ather Energy	Ather 450
Ather450	Ather Grid	TrueRange

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Source: https://blog.atherenergy.com/soft-things-about-hard-things-e849aa2b62e6
https://www.quickcompany.in/design?utf8=%E2%9C%93&q=ather+energy
https://ipindiaservices.gov.in/PublicSearch/PublicationSearch/Search
https://www.atherenergy.com/trademarks

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Ather Energy's IP strategy and SBM evolution

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Profile Environment
SBM
IP Strategy
Transitions

2013	2014	2015	2016	2017	2018	2019-2022
No market for battery packs + No player in electric 2-wheeler space		FAME India I (Faster Adoption & Manufacturing of (Hybrid) & EV Scheme (April)	Incumbent funding (October)			FAME India II Scheme

Strategic direction from executive from incumbent

Lithium-ion battery packs & 2-wheeler platform

Institute endowment funding

Angel investor & VC funding

Prototype demonstration of IoT based two wheeler EV

Touchscreen dashboard

OTA Software update

On-board diagnostic

GPS

Launch of IoT based e-scooter + Fast public charging stations for EV

Appointment of new director –joined from MNC OEM

SBM 1 - Maximizing efficiency

Value creation & delivery
Internal R&D with institute endowment, angel investors' and venture capital funds, critical human resource (top management, Industrial design team, Data intelligent team etc.) Manufacturing plant, Charging stations, experience centers

Value capture
Break-even at 50,000 units' sales mark

Leasing, rental & subscription scheme

SBM 4 - Deliver functionality rather than ownership

Buyback program

SBM 2 - Closing Resource Loop

Club (semi-open Type 1) IP model
Know-how out-sharing with other battery manufacturing start-ups

Fully-open IP model
Releasing IP on rapid charging technology to standardise two-wheeler charging adapter/connector for all EVs

Common (semi-open Type 2) IP model
Defensive publication + open-source software with some restriction on commercial use

Private (closed) IP model
no sharing of IP for value capture, acknowledgement to engineers, freedom to operate, to avoid litigation

Company – Company transitions
Learning strategy maturing to re-visioning, Re-purposing, & Re-branding ; Eco-efficiency; broadened value proposition

Company – Sector transitions
Inter-firm collaboration in the same industry; Advocacy, coalitions, lobbying leading strategy' inspiring others for sustainability

Sustainability Transition

Company – Company (C-C) transition

Learning strategy maturing to re-visioning, Re-purposing, & Re-branding ; Eco-efficiency; broadened value proposition

Company-sector (C-S) transition

Facilitating the entry of new entrants & catalysing e-mobility infrastructure & ecosystem

"In the absence of a standard connector for light electric vehicles, Ather has developed one and also released the intellectual property (IP) on the connector, making it accessible to anyone looking to design and build EVs to further the mission of a sustainable energy ecosystem.. Tearing down the IP walls here and helping with engineering at an early stage will help drive a common standard" **CEO**

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Sources: https://automotivedesignplanet.com/ather-energy-releasing-patents/
https://www.firstpost.com/tech/auto-tech/why-ather-energy-thinks-sharing-its-fast-charging-tech-will-boost-electric-two-wheeler-sales-in-india-9877051.html
https://assets.atherenergy.com/Ather_Energy's_Impact_Report_2020.pdf

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Ather Energy's sustainability impact

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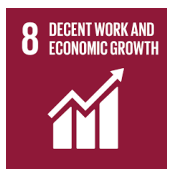
Environmental Impact

- **Global Impact – GHG emission reduction:** Saved 7.5 metric tons of CO2 emission through the vehicle, no usage of plastic bottles across organization saved 17.5 MT of CO2 emissions
- **Local Impact – waste management & 3R:** Recycling of e-waste through registered recyclers & using the used batteries for secondary purpose, in-house sewage plant reduces water wastage
- **Environment improvement beyond compliance:** supporting government in formulating policies and standard for EV and implementing best-practices for waste management

Social Impact

- **Labour practices- equity**: Employed more than 800 employees with 14% female employees. Of all female employees, 30% are employed in manufacturing facility and 27% are line supervisors
- **Labour practices - Human rights:** Organise community building calendars with events or activities around topics like gender, LGBTQIA, multi-regional dialogues, age etc.
- **Training & development:** Employees receive 20 hours of training per year and provide 3000 hours of training to graduates trainees and 1117 hours of training to factory associate on EV technology
- **Community development:** Formula Bharat program to train students on EV design, software and IoT technology



Economic Impact

- **Profit & sales contribution of sustainable technologies**: Ather Energy has sold more than 6000 vehicles, and expanded across 10 cities with 125 charging stations, as on Feb 2021.
- **Capital investment in sustainable technologies:** Building a network of charging grids and charging stations
- within 4 kilometres radius in every city of launch
- **Increased R&D investment** for battery efficiency, reliability and safety

Sources: https://assets.atherenergy.com/Ather_Energy's_Impact_Report_2020.pdf

Key learnings: IP strategies for sustainability

- Registration and ownership of formal and informal IP assets are essential for an SDG oriented technology start-up firm in the prototyping, technology development and demonstration stage for the following principal reasons:
  - To acknowledge the R&D efforts of engineers and inventors and obtain returns on Investment (ROI). IP protection and ownership, in turn, ensure the economic sustainability of the start-up firm.
  - To obtain freedom to operate and avoid potential litigation from other significant competitors in the conventional non-green technology field.
  - To facilitate the sectoral transition towards sustainability. In the early technology development stage, published patent applications by technology start-ups are a signalling tool to attract strategic investment and partnerships from large MNCs with limited green-technology capacity. Through such investments, large MNCs can transition towards sustainability by first facilitating the marketing and diffusion of green technologies and then entering into new green technology development.

- An SDG oriented, sustainable-technology start-up can experiment with one or multiple combinations of relatively open IP models, i.e. club-IP model, common-IP model, and fully-open IP model in the application and diffusion phase of sustainable-technology field once the company has built a reputation in this technology. By adopting relatively open IP models, the firm can encourage the entry of new firms and build ecosystem and infrastructure around the green technology field, thus accelerating the company to the sector, i.e. C-S transition towards sustainability.

Key learnings: IP strategies for sustainability

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- Adopting club (semi-open-1) IP model, i.e. out-sharing of know-how of the sustainable technology's core component with other small and new start-up firms can help the company develop a future supplier base in the emerging green technology industry sustainability. This, in turn, creates a positive environmental impact and enable the sectoral transition towards sustainability.

- A common (semi-open 2) IP model, e.g. defensive publication and open source software with some restrictions on its' commercial use, can help the company to put in the public domain the newly redesigned and improved version of the previously proprietary technology for new applications and wider diffusion of sustainable technology. It creates a positive environmental impact (through environment improvement beyond compliance), social impact (through encouraging new start-ups and employment generation), and economic impact (through new industry development and encouraging green investment by others).

- Adopting a fully-open IP model (i.e. releasing the formal IP like patents in the public domain) for complex green technology helps accelerate the development of new sustainable-technology standards. This effect is enhanced if the company also shares the complementary informal IP (i.e. industrial and technology know-how) with new players or potential technology users.

Website: ***www.ip4sustainability.org***
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