

AI and Economy

- While AI may substitute for certain jobs, it generates new jobs in turn, for instance AI programmers.
- A future where AI has eliminated the need for all forms of work is one where AI has become self-aware where AI software can not only take on the task it was designed for, but can also design AI to undertake new tasks, and operate and maintain itself
- Keynes theorised that technological change under capitalism would eventually lead to a reduction of working hours.
- Karl Marx had a more nuanced analysis.
- For him, the essence of humanity lies in our ability to materially manipulate nature; work therefore provides meaning to human life.
- The problem arises within the economic system of capitalism, as the product of human labour is not the labourers' to enjoy, but is seen as the property of capital to dispose of in the market for profit.

Capitalism, in this reading, causes humanity to lose touch with the one activity that provides self fulfilment

- The impact of AI on the economy
- Assume a situation where AI has advanced to the point that it is capable of substituting all kinds of labour.
- Under our current system of capitalism, the only way an individual can access material resources such as food and shelter is through income derived from work.

A world without work

- Imagine an economy where a part of the surplus generated in the productive sphere where AI is the only productive factor is transferred to human individuals to meet their basic needs.
- There is nothing wrong, of course, with postulating such a world. But this is not a capitalist world.
- It is a world with very different institutional arrangements regulating production and distribution, one where a universal basic income is a

major source of income and not wage labour.

- This throws up several important questions, such as what determines the amount individuals receive, what determines the division of the net product between those who own the machines and those who don't and what determines the division between future growth versus current consumption.

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Catalonia

The story so far:

- Spain's socialist (PSOE) government struck a contentious amnesty deal on November 9 with the hardline Catalan separatist party, together for Catalonia, to enable another four year term for caretaker Prime Minister Pedro Sanchez.



Source: Esri

MARK NOWLIN / THE SEATTLE TIMES

- The chief of Together with Catalonia, Carles Puigdemont, a fugitive from the Spanish justice system, has dangled the carrot of his seven seats in exchange for an amnesty for him and hundreds of others in connection with the secessionist agitation.

- Critics contend that the withdrawal of penalties against those involved in the unconstitutional referendum would undermine the principle of equality before the law.

- Spain has come to exemplify the wider European phenomenon of post electoral stalemate, underpinned by a steady erosion of the two party system and the mushrooming of smaller parties on the extreme right and left of the political spectrum.

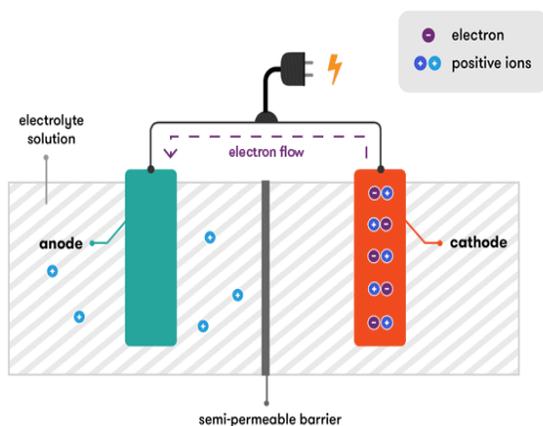
• About Catalonia

- Catalonia may be a Spanish region, but it doesn't always feel like it. Catalans are fiercely proud of their language, heritage and customs, evident in the region's wealth of world-renowned art, music and architecture.

- The Catalan independence movement is a social and political movement (with roots in Catalan

nationalism) which seeks the independence of Catalonia from Spain. A Catalan independence protest in July 2010

- Electric battery and Lithium ion battery



more reactive, before the less reactive electrode starts to erode.

- For example, in a (non-rechargeable) carbon zinc battery, zinc erodes preferentially as the battery is used

What are the types of batteries?

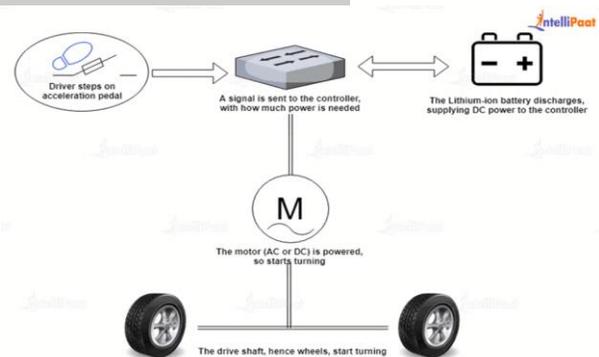
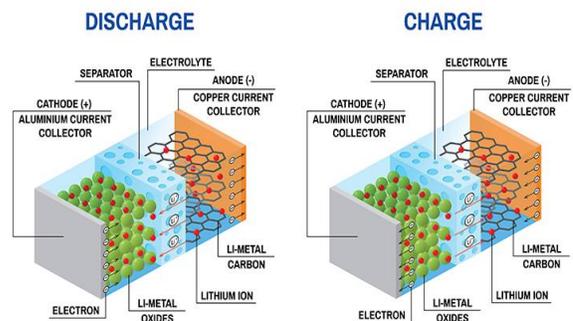
- Two batteries that are often on the news these days are the lithium ion (Li-ion) battery and the batteries used in Electric Vehicles (EVs).
- The Li-ion battery won the developers of its foundational principles the Nobel Prize for chemistry in 2019

- A well known problem that degrades the performance of electrochemical cells is corrosion.

- For example, in humid conditions, water droplets can condense on the electrodes. If atmospheric carbon dioxide levels are high, the water can combine with the gas to produce carbonic acid, which can corrode the electrode.

- Another source is galvanic corrosion, whereby one of the electrodes in a cell dissolves faster into the electrolyte over time because it is

LITHIUM-ION BATTERY



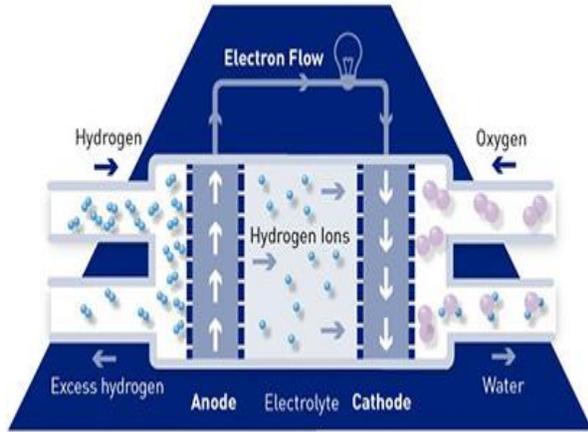
Current Affairs 15th November 2023 by Saurabh Pandey

- This battery is a voltaic as well as an electrolytic cell.
- A voltaic cell converts chemical energy to electrical energy. An electrolytic cell converts electrical energy to chemical energy.
- A battery that can do both is thus rechargeable.
- In a Li-ion polymer cell, used in smartphones, a lithium metal oxide is the cathode and graphite is the anode.
- The electrolyte is a semisolid polymer gel. Microporous polyethylene is used to separate the two half cells.
- The basics are as follows: in the voltaic phase, lithium oxidizes to Li^+ in the anode and releases an electron.
- The electron moves via the external circuit to the cathode whereas the Li^+ moves via the electrolyte to the cathode.
- There, the ion slips between the layers of carbon sheets that graphite is made of in a process called intercalation.
- In the electrolytic phase, an over-voltage is applied to the cell so that it charges and the Li^+ moves from the graphite to intercalate in the metal oxide, getting ready for the next discharge.

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Hydrogen Fuel cells

- Hydrogen fuel cells are also of great interest today. At the anode, a catalyst separates hydrogen into protons and electrons.
- The electrons flow through an external circuit and the protons through the electrolyte both to the cathode.
- At the cathode, the particles react with oxygen from the air to create heat and water.
- A cell like this will work as long as hydrogen is supplied, and is expected to be a key component of the hydrogen economy



- The fund will be directly transferred to the bank accounts of the beneficiaries.
- There are various Exclusion Categories for the scheme.

The following categories of beneficiaries of higher economic status shall not be eligible for benefit under the scheme.

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PM KISAN

- PM Kisan is a Central Sector scheme with 100% funding from Government of India.
- It has become operational from 1.12.2018.
- Under the scheme an income support of 6,000/- per year in three equal installments will be provided to all land holding farmer families.
- Definition of family for the scheme is husband, wife and minor children.
- State Government and UT administration will identify the farmer families which are eligible for support as per scheme guidelines.
- All Institutional Land holders.
- Farmer families which belong to one or more of the following categories:
 - Former and present holders of constitutional posts
 - Former and present Ministers/ State Ministers and former/present Members of Lok Sabha/ Rajya-Sabha/ State Legislative Assemblies/ State Legislative Councils, former and present Mayors of Municipal Corporations, former and present Chairpersons of District Panchayats.
- All serving or retired officers and employees of Central/ State Government Ministries /Offices/Departments and its field units Central or State PSEs and Attached offices /Autonomous

Institutions under Government as well as regular employees of the Local Bodies (Excluding Multi-Tasking Staff /Class IV/Group D employees)

- All superannuated/retired pensioners whose monthly pension is Rs.10,000/-or more (Excluding Multi-Tasking Staff / Class IV/Group D employees) of above category
- All Persons who paid Income Tax in last assessment year
- Professionals like Doctors, Engineers, Lawyers, Chartered Accountants, and Architects registered with Professional bodies and carrying out profession by undertaking practices.

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Rashtriya Vigyan purashkar

- The Government of India has come out with a new set of National Awards in the field of Science, Technology and Innovation known as “Rashtriya Vigyan Puraskar”.
- The objective of the Rashtriya Vigyan Puraskar (RVP) is to recognize the notable and inspiring contribution

made by the scientists, technologists, and innovators individually or in teams in various fields of science, technology and technology led innovation.

- The Rashtriya Vigyan Puraskar shall be one of the highest recognitions in the field of science, technology, and innovation in India.
- Scientists/ technologists/innovators working in government, private sector organizations or any individual working outside any organization, who have made distinguished contributions in terms of path-breaking research or innovation or discovery in any field of science, technology, or technology- led innovation shall be eligible for the awards

RATIONALISATION OF SCIENCE AWARDS

National Science Awards will be given in four categories

Vigyan Ratna: For lifetime achievements & contributions	Vigyan Shri: For distinguished contributions	Vigyan Yuva-Shanti Swarup Bhatnagar: Recognize & encourage young scientists up to the age of 45 years who made an exceptional contribution
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Vigyan Team: Award to be given to a team comprising three or more scientists/ researchers/ innovators who have made an exceptional contribution

➤ There will be total 56 awards in these four categories put together	➤ There will be no cash component in these awards	➤ Awards will have a 'Sanad' and a medal each	➤ Awards will be given in the 13 domains of science
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56 AWARDS

➤ **Nat'l science awards, which are to be given annually on Aug 23** (National Space Day), will possibly be given by the President, in a move to give them the stature of Padma awards

➤ A total of **56 awards will be given in four categories covering 13 domains**

➤ Akin to the Padma awards, these awards **will not have any cash component**

- The Rashtriya Vigyan Puraskar shall be given in the 13 domains, namely Physics, Chemistry, Biological Sciences, Mathematics & Computer Science, Earth Science, Medicine, Engineering Sciences, Agricultural Science, Environmental Science, Technology & Innovation, Atomic Energy, Space Science and Technology, and Others.

- The representation from each domain/field, including gender parity will be ensured.

- All nominations received for the Rashtriya Vigyan Puraskar awards shall be placed before the Rashtriya

Vigyan Puraskar Committee (RVPC) to be headed by the Principal Scientific Adviser (PSA) to Government of India and comprising Secretaries of Science Departments, members of Science and Engineering Academies and some distinguished scientists and technologists from different fields of science and technology.

- The nominations for this bouquet of awards will be invited every year on 14th January which would remain open till 28th February (National Science Day) every year.

- These awards shall be announced on 11th May (National Technology Day) every year. The Award Ceremony for all categories of awards will be held on 23rd August (National Space Day). All Awards will have a Sanad & a medal.

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