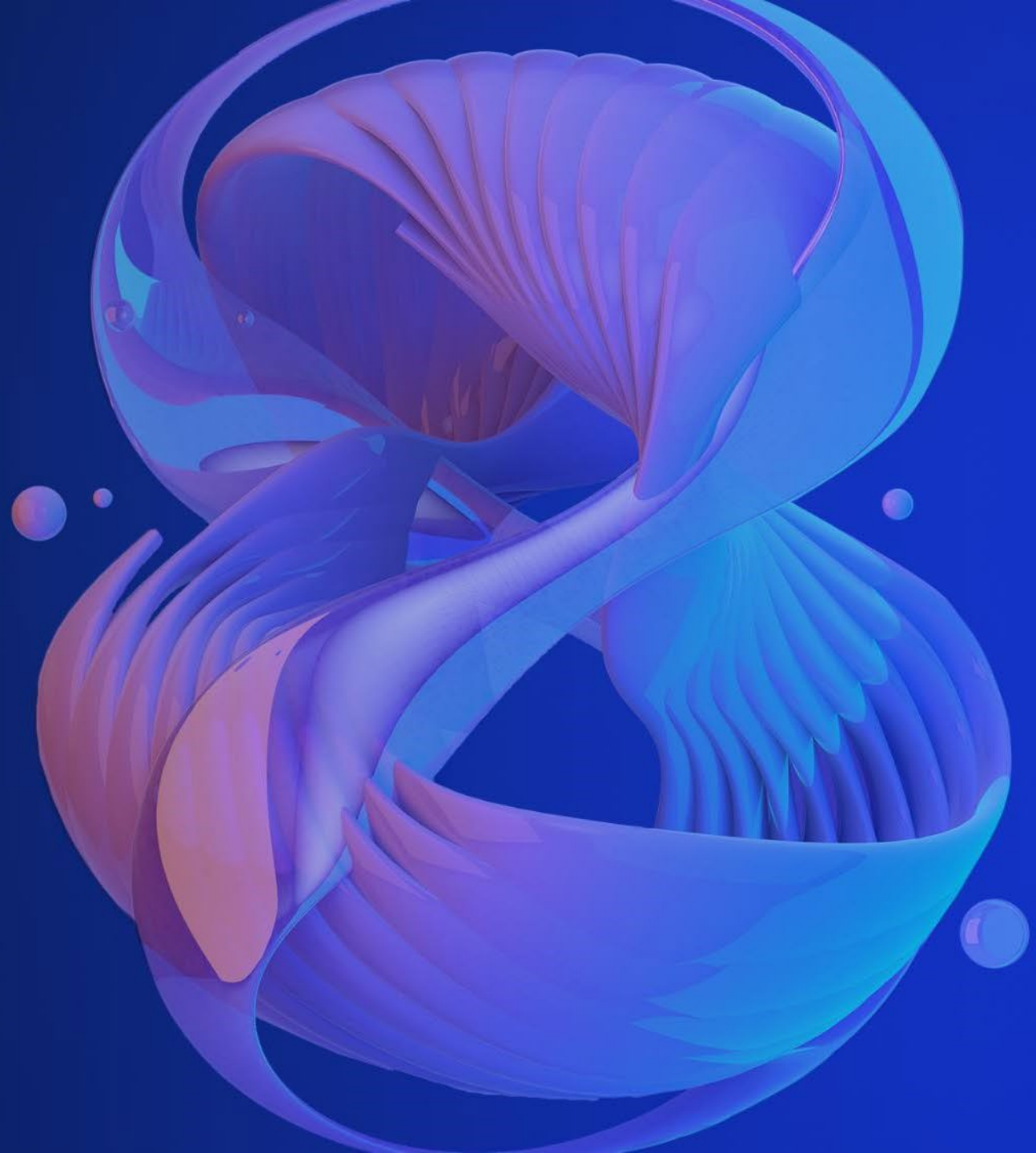




Understanding the Inflation Reduction Act (IRA)

June 2023

KPMG International



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Agenda

1	Introductions
2	Overview of the IRA credits and incentives as applicable to the energy industry
3	Global ESG/R&D tax credits and incentives
4	What's next in this space?
5	Q&A and wrap-up

Administration

Attendee questions

- You may submit questions in the *Ask a question* button on the left. We will answer as many questions as we can during Q&A. If we are unable to answer your question during the webcast, someone from KPMG may reply via phone or email following the webcast.
- For technical issues, please use the *Question Mark* button in the upper-right hand corner of the media player.



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Overview of the IRA credits and incentives as applicable to the energy industry

Inflation Reduction Act (IRA)/Climate act

IRA aims at reduction of inflation and funds clean energy investment via loans, grants, tax credits and rebates

\$735+ billion

of revenue raisers via 15 percent corporate minimum tax (\$222B), prescription drug pricing reform (\$265B), IRS tax enforcement (\$124B), 1 percent excise tax on stock buybacks (\$74B), loss limitation extension (\$52B)

\$300 billion

expected federal deficit reduction over a decade

\$435+ billion

investments across energy security and climate change (\$369B), Affordable Care Act subsidies (\$64B), and western drought resiliency (\$4B)

~\$379 billion

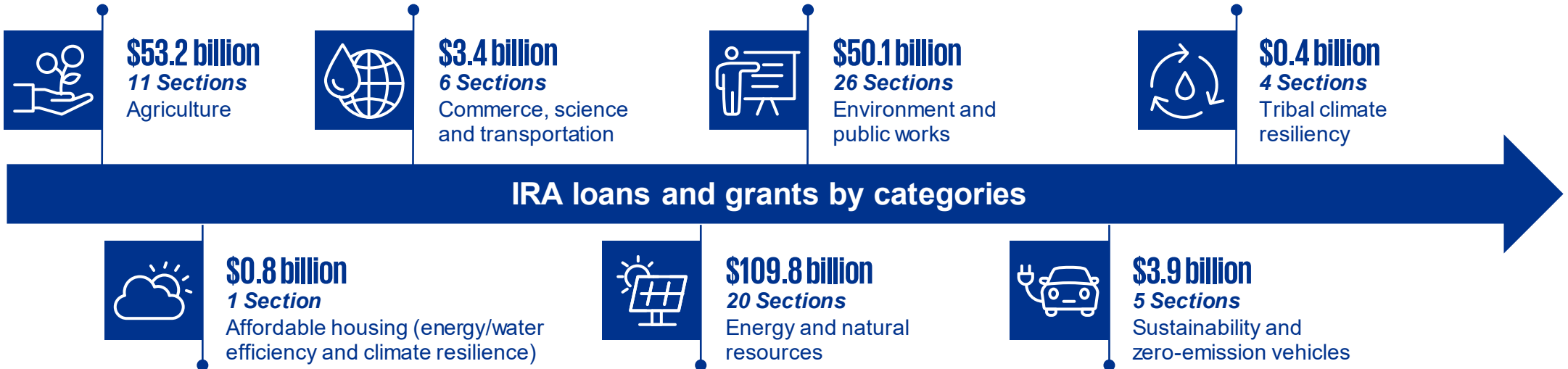
total funding of climate related programs allocated for various loans, grants, technical assistance programs across sectors

Funding criteria

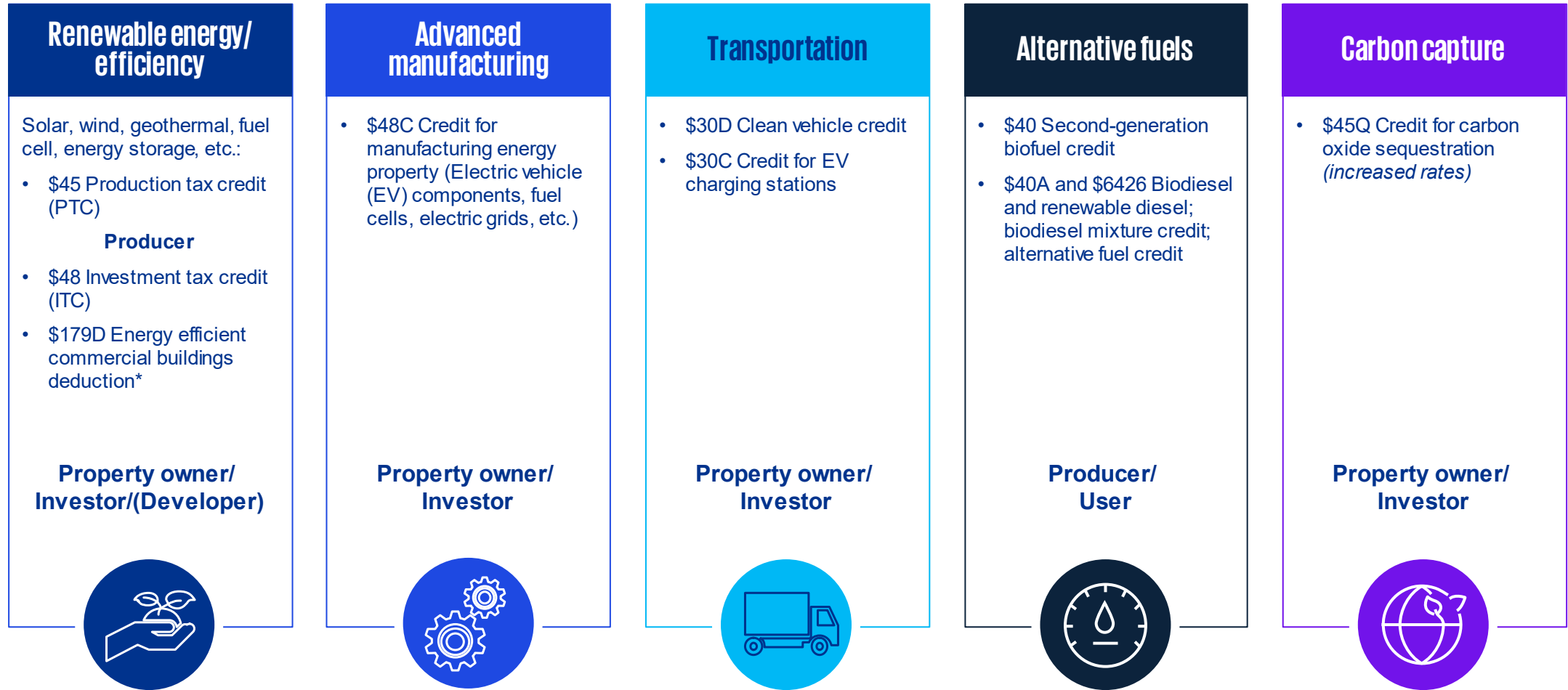
to target climate resiliency, sustainability, healthcare, reduction of emissions and use of natural resources

Recipients

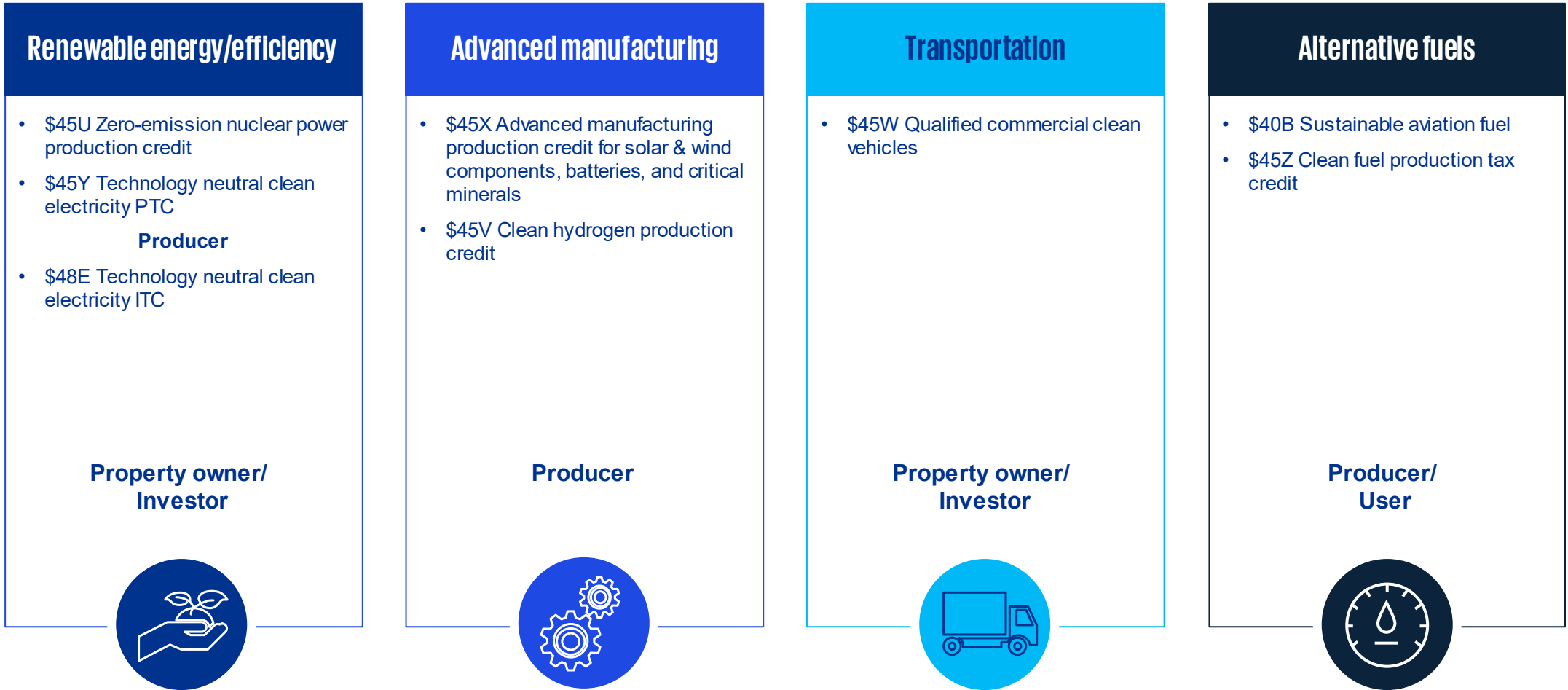
include companies, states, tribes, local governments, governmental agencies, NPOs, institutes of research/higher education



IRA: Extensions and modifications to existing credits



IRA: New credits



Energy tax provisions — New requirements

Prevailing wage and apprenticeships



- Significantly higher credit rates available for projects which satisfy certain wage and workforce requirements during the construction and operation of the projects
- Under transition rule, generally, projects that begin construction on or before 29 January 2023 are eligible for the bonus rate even if they do not satisfy the prevailing wage and apprenticeship requirements
- Curing process

Domestic content



- Additional credits available in some cases if projects are constructed using domestically sourced steel and iron, as well as manufactured products
- Effective for projects placed in service after 2022

Other targeted credit enhancements



- Additional credit amounts available in some cases for projects located in low-income communities, brownfield sites, and communities formerly reliant on coal and fossil fuel industries
- Effective for projects placed in service after 2022

Energy tax provisions — Monetization

“Direct pay” options for



The legislation also
allows taxpayers to
monetize tax credits
by transferring credits
to third parties



- Section 45Q Carbon Oxide Sequestration Tax Credit
- Section 45V Clean Hydrogen Production Credit
- Section 45X Advanced Manufacturing Production Credit
- Tax-exempt entities, states, and political subdivisions thereof

- Transfer shall be required to be paid in cash
- Transfer shall not be includible in gross income of the transferor
- Amount paid by the transferee shall not be deductible
- Eligible credits can only be transferred once

Energy tax provisions — Monetization (continued)

Transferability and refundability — Emerging themes



- Ability of partnerships to elect direct pay on behalf of tax-exempt partners
- Ability to claim partial direct pay
- Timing/ability to expedite refunds under section 6417
- Interplay of refundability and requirement to make estimated tax payments
- Recapture and indemnification
- Ability of individuals to buy tax credits
- Reasonable cause exception to 20 percent penalty for excessive payments/credit transfers
- Registration system for transferable tax credits
- Role of direct pay and transferability in tax equity transactions
- Interaction with Pillar 2
- Awaiting IRS guidance

Selected IRA tax credit provisions

\$48 Investment tax credit (ITC)

One-time investment tax credit (ITC) equal to a percentage of the basis of qualifying energy property placed in service during the taxable year.

Eligible basis



ITC %



ITC



Eligible property

- Solar, fuel cell, small wind, geothermal, microturbine, combined heat and power, waste energy recovery, & offshore wind
- **New:** Energy storage, qualified biogas property, & microgrid controllers



Claimed in the year the qualifying energy property is placed in service

- 5-year recapture period (20 percent step-down each year)
- Basis reduction equal to 50 percent of ITC
- Basis reduced for tax-exempt bonds



Qualifying energy property

- Tangible personal property or other tangible property used as an integral part of the qualified facility
- Must be original use property (not “used” or previously placed in service property)

\$48 Investment tax credit (ITC)



ITC was beginning to phase down. The new ITC credit rates would generally apply to projects that are placed in service after 2021.

- Exception: newly-eligible technologies effective for projects placed in service after 2022



Technologies qualifying for 30% bonus/6% base rate:

- Solar
- Small wind
- Waste energy recovery property
- Offshore wind
- Fuel cell
- Geothermal (increased rate)
- Combined heat and power (increased rate)
- Energy storage (**new**)
- Qualified biogas property (**new**)
- Microgrid controllers (**new**)



Beginning of construction deadline: Must begin construction prior to 2025

- Shifting to technology-neutral regime in 2025 — See sections 48E and 45Y



Technologies qualifying for 10% bonus/ 2% base rate:

- Microturbine



Credit is transferable for projects placed in service after 2022

\$45 Production tax credit (PTC)

- **Prior to IRA:** No PTC was available for projects that begin construction after 2021, and there was a PTC rate phaseout for onshore wind projects that began construction prior to 2022.
- **Eligible Property:** Qualified facilities include wind, solar, biomass, geothermal, landfill gas, hydropower
- **Rates**
 - Wind, Geothermal, Hydropower, Closed loop biomass: Bonus rate of 1.5 cents/kWh; Base rate of 0.3 cents/kWh (pre-inflation adjustment)
 - Rates are inflation adjusted. After inflation adjustment, bonus rate for wind, geothermal, hydropower, and closed loop biomass is \$2.75/kWh
 - Open-loop biomass, landfill gas: Subject to a 50 percent credit reduction
- **Effective date:** Applies to projects placed in service in 2021
- **Begin Construction Deadline:** Must begin construction prior to 2025
 - Shifting to technology-neutral regime in 2025 — See \$48E and 45Y
- **Credit Period:** 10-year credit period beginning in year facility is placed in service
- **Other Requirements:**
 - Electricity must be produced by the taxpayer and sold to an unrelated party
 - Credit reduced for tax-exempt bonds
 - Credit transferable for projects after 2022

\$45Q Credit for carbon oxide sequestration

Credit rates

- Permanent storage — Storage-based credit rate = \$17; bonus credit rate = \$85
- EOR (enhanced oil recovery)/Utilization-base credit rate = \$12; bonus credit rate = \$60
- Direct Air Capture (SGS) — base credit rate = \$36; bonus credit rate = \$180
- Direct Air Capture (EOR/Utilization) — base credit rate = \$26; bonus credit rate = \$130
- Rates indexed for inflation after 2026

Refundability

- Elective — election made separately with respect to CCE (carbon capture equipment) placed in service during the tax year; election in place for 5 years
- No domestic content requirement/phasedown

Minimum capture thresholds (effective for projects with beginning of construction (BOC) after 16 August 2022)

- Permanent storage — Storage-based credit rate = \$17; bonus credit rate = \$85 Direct air capture: no less than 1,000 metric tons of carbon oxide per year
- Electricity generating facilities: no less than 18,750 metric tons of carbon oxide and 75 percent of total carbon emission
- Other industrial facilities: no less than 12,500 metric tons of carbon oxide

Dates

- Extends beginning of construction deadline to 31 December 2032
- All other changes effective after 31 December 2022

Other considerations

- Credit reduced for tax-exempt bonds
- Sunsets the “old” section 45Q for CCE placed in service prior to 8 February 2018

\$45V Clean hydrogen production credit

Credit rates

- Determined by multiplying the applicable amount and the kilograms of qualified clean hydrogen produced
- The applicable amount = the applicable percentage * \$0.60 (or \$3.00 when certain wage and workforce requirements are met)
- Applicable percentage:
 - 20% for a process that results in a GHG (greenhouse gas) rate of 2.5–4 kg of carbon dioxide equivalent (CO₂-e) per kilogram (kg) of hydrogen;
 - 25% for a process that results in a GHG rate of 1.5–2.5 kg of CO₂-e per kg of hydrogen;
 - 33.4% for a process that results in a GHG rate of 0.45–1.5 kg of CO₂-e per kg of hydrogen; and
 - 100% for a process that results in a GHG rate of < 0.45 kg of CO₂-e per kg of hydrogen.
- Applicable amount would be inflation adjusted
- 10-year credit period

Refundability for first 5 years

Dates

- Effective for hydrogen produced after 2022; Beginning of construction deadline 31 December 2032

\$45V Clean hydrogen production credit (continued)

Other requirements

- Hydrogen must be
 - Produced in the U.S.
 - In the ordinary course of a trade or business of the taxpayer
 - For sale or use (as verified by an unrelated party)
- Qualified facility — must be owned by the taxpayer; production allocated if more than one owner

Interaction with other sections

- Cannot claim both \$45Q and the clean hydrogen production tax credit with respect to the same facility
- Can claim the \$45 PTC for electricity produced from renewable resources and the clean hydrogen production tax credit if the electricity is used at the facility to produce clean hydrogen
- In lieu of the clean hydrogen production tax credit, can elect to treat the facility (or a portion of the facility) as energy property under \$48. (The energy percentage would range from 1.2 to 6 percent base rate and 6 to 30 percent bonus rate depending on the type of clean hydrogen that is produced.)

Open issues

- Definition of facility — credit stacking
- GREET model functionality

Alternative fuel tax provisions

\$45Z Clean fuel production tax credit

- New per-gallon tax credit for the production of low-emissions transportation fuel produced and sold from a qualifying facility
- **Credit Amount:** The product of: (i) the applicable amount per gallon with respect to any transportation fuel produced at a qualified facility and sold by the taxpayer to an unrelated person for use in the production of a fuel mixture, for use in a trade or business, or for sale at retail and (ii) The emissions factor of such fuel.
 - Base credit rate (applicable amount): \$0.20/gallon (or \$0.35/gallon for aviation fuel)
 - Increased credit rate (applicable amount): \$1.00/gallon (\$1.75 for aviation fuel), if prevailing wage and apprenticeship requirements are met
- **Emissions Factor:** The Treasury Department is required to annually publish emissions rates for fuels that are produced using similar feedstocks and production pathways that taxpayers would use for purposes of determining their credit rates. This emissions rate would then be used to compute the emissions factor, with a credit provided for fuels with emissions below 50 kg CO₂-e per mmBtu. The lower the emissions rate, the higher the credit would be.
- **Project Types:** Fuels would be required to be transportation grade — suitable for use in a highway vehicle or aircraft — but could be used for any business purpose, including as transportation fuel, industrial fuel, or for residential or commercial heat.
- Cannot claim both the 45Z credit and the 45Q, 45V, or the 48 ITC for clean hydrogen in a given tax year.
- **Key dates:** Applies to the production of qualified fuel after 2024. Credit sunsets for fuel sold after 2027.

\$48C Credit for manufacturing advanced energy property

The bill authorizes \$10 billion in credits

- At least \$4 billion of these credits must be allocated to investments in coal census tracts
- 30 percent ITC available for constructing, re-equipping, or expanding a qualifying advanced energy property (QAEP) manufacturing facility (wind, solar, carbon capture, electric grids, electric vehicles (EVs) and components)
- Base rate = 6%

Qualified manufacturing facilities include facilities that manufacture the following items:

- Property designed to produce energy renewable resources, as well as fuel cells, microturbines, and energy storage
- Grid modernization equipment
- Property designed to capture and sequester dioxide emissions
- Property designed to refine or blend renewable fuels or to produce conservation technologies (including lighting and smart grid technologies)
- Electric vehicles (as well as hybrid and fuel cell vehicles) or components including relating to recharging infrastructure
- Other advanced energy property designed to reduce greenhouse gas emissions as may be determined by the Secretary
- Also eligible — taxpayers that re-equip an industrial or manufacturing facility with equipment designed to reduce greenhouse gas emissions by at least 20%
- Also eligible — taxpayers who re-equip, expand, or establish an industrial facility for the processing refining or recycling of critical materials

Credits allocated in competitive application process: \$4 billion to be allocated in Round 1, starts 30 June 2023

\$45X Advanced manufacturing production credit

Provides a credit for certain eligible components (wind, solar, battery, critical minerals) produced by the taxpayer and sold to an unrelated person

Available for components produced and sold after 2022

The prevailing wage and apprenticeship requirements do not apply to this credit

Interaction with 48C: The credit is not allowed for components produced at a facility receiving a \$48C credit

Direct Pay/Refundability

- Taxpayers may elect to make the credit refundable through a direct pay mechanism
- Such election would apply to the taxable year and four subsequent taxable years

Transferability

- A taxpayer may elect to transfer the credit (or any portion of the credit) to an unrelated taxpayer.
- For any taxable years for which a direct pay election is made, taxpayers may not also elect to transfer the credit.

Phase out

- For components sold after 2029, the credit is reduced by 25% each year, and would be unavailable for components sold in 2033 and beyond
- Exception: critical minerals

\$45Q Credit for carbon oxide sequestration

Credit rates

- Permanent storage — Storage-based credit rate = \$17; bonus credit rate = \$85
- EOR (enhanced oil recovery)/Utilization — base credit rate = \$12; bonus credit rate = \$60
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Other considerations

- Credit reduced for tax-exempt bonds
- Sunsets the “old” section 45Q for CCE placed in service prior to 8 February 2018

\$30D Clean vehicle credit

Section 30D for purchases of new cars by individuals



Up to \$7,500
per vehicle

New requirements
added

Transferable
to dealer

Per manufacturer cap
lifted (effective in 2023)

New requirements

- North American Assembly of Vehicle — effective 16 August 2022
- North American Manufacture/Assembly of Battery Components — effective March 2023
- Critical Minerals — effective March 2023
 - Requires that critical mineral components of the electric vehicle battery be extracted or processed in a country with which the US has a free trade agreement in effect or recycled in North America.
- MSRP Cap (\$80,000 for SUVs and pickups; \$55,000 for other vehicles) — effective 1 January 2023
- AGI Limits (\$300,000 for married filing jointly; \$225,000 for heads of household; \$150,000 for others) — effective 1 January 2023

\$45W Qualified commercial clean vehicles

Commercial clean vehicle credit



Credit for vehicles purchased use or lease in a trade or business, credit amount is the lesser of:

- 15% of the basis of such vehicle (30% in the case of a vehicle not powered by a gasoline or diesel internal combustion engine) or
- The incremental cost of such vehicle, which is an amount equal to the excess of the purchase price for such vehicle over such price of a comparable vehicle (i.e., any vehicle that is powered solely by a gasoline or diesel internal combustion engine and which is comparable in size and use to such vehicle). Legislation requires the Secretary to issue guidance on how to determine the incremental cost of any eligible vehicle.

The maximum credit for a qualifying vehicle with a gross vehicle weight rating of less than 14,000 pounds would be \$7,500. The amount would increase to \$40,000 for all other eligible vehicles.

No 30D limitations (MSRP, AGI, Assembly, Battery Components, or Critical Minerals)

\$30C Credit for EV charging stations

Charging station credit



Credit Qualifications

- **Pre-IRA Qualification:** Under prior law, taxpayers were eligible to claim an income tax credit for up to 30% of the cost of electric vehicle recharging stations (capped at \$30,000 per location per year for business taxpayers). The credit was not available for recharging stations placed in service after 2021.
- **IRA changes:** Extended prior law credit for property placed in service in 2022. Then, starting in 2023, the credit is available with potentially higher credits amount, but new location restrictions.
- **Credit Amount:**
 - Base credit rate: 6%
 - 30% (6% if prevailing wage and apprenticeship requirement not satisfied) tax credit on alternative fuel refueling property up to \$100,000 and a 20% tax credit on amounts over \$100,000.
- **Location Requirements:** Property must be located in an eligible census tract to be eligible for the credit. This is generally, low-income communities for purposes of the New Market Tax Credit, or a location that is not in an urban area.

Available for property placed in service prior to 2023

Alternative fuel tax provisions

Extension of existing tax incentives for biodiesel, renewable diesel, alternative fuels, and second generation biofuel

\$40B Sustainable aviation fuel credit

- For 2023 — 2024, there is a new tax credit for each gallon of sustainable aviation fuel in a qualified mixture that is sold or used as a fuel in aviation.
- **Credit Amount:** \$1.25 per gallon if GHG emissions reduction percentage of at least 50% compared to petroleum-based jet fuel, plus a supplementary credit of up to \$0.50 per gallon for each percentage point by which the emissions reduction percentage exceeds 50%

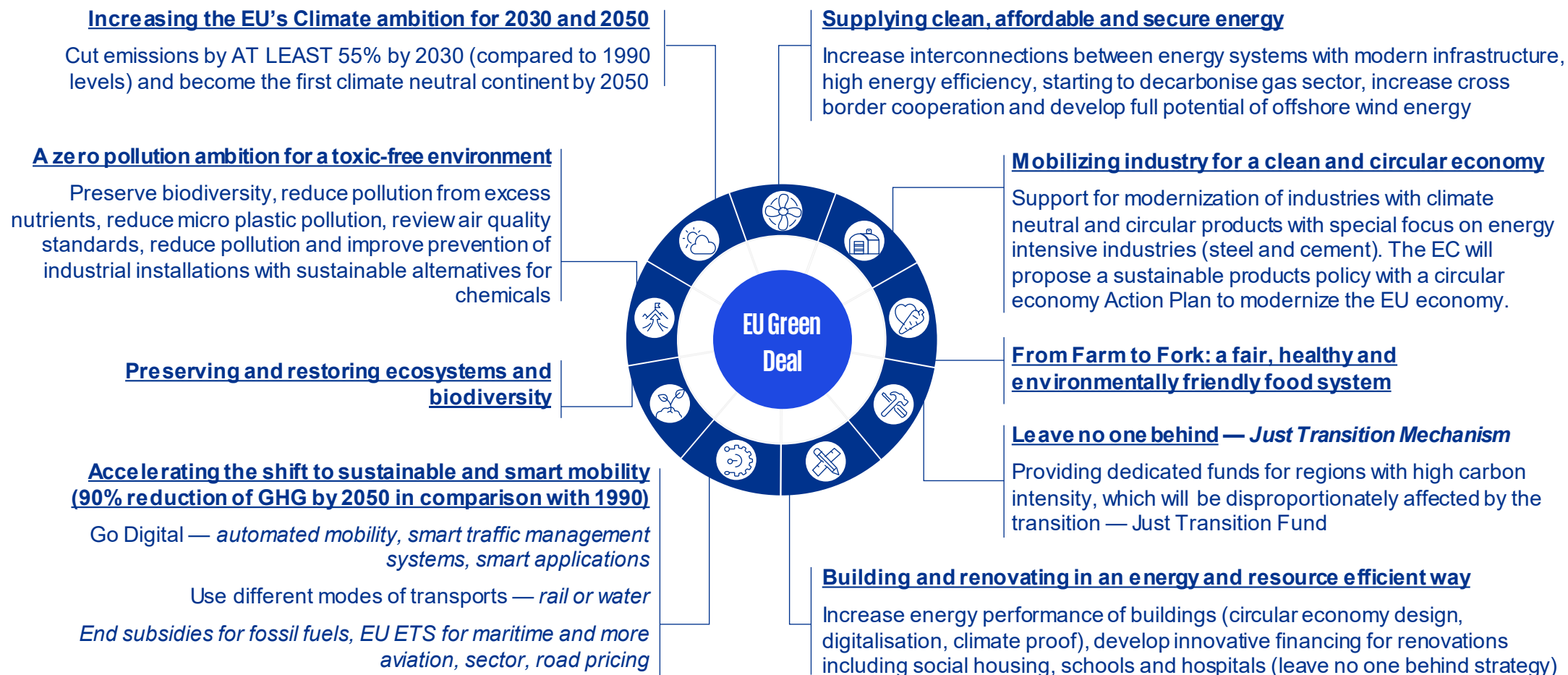
Alternative fuel tax provisions (continued)

\$45Z Clean fuel production tax credit

- New per-gallon tax credit for the production of low-emissions transportation fuel produced and sold from a qualifying facility
- **Credit Amount:** The product of: (i) the applicable amount per gallon with respect to any transportation fuel produced at a qualified facility and sold by the taxpayer to an unrelated person for use in the production of a fuel mixture, for use in a trade or business, or for sale at retail and (ii) The emissions factor of such fuel.
 - Base credit rate (applicable amount): \$0.20/gallon (or \$0.35/gallon for aviation fuel)
 - Increased credit rate (applicable amount): \$1.00/gallon (\$1.75 for aviation fuel), if prevailing wage and apprenticeship requirements are met
- **Emissions Factor:** The Treasury Department is required to annually publish emissions rates for fuels that are produced using similar feedstocks and production pathways that taxpayers would use for purposes of determining their credit rates. This emissions rate would then be used to compute the emissions factor, with a credit provided for fuels with emissions below 50 kg CO₂-e per mmBtu. The lower the emissions rate, the higher the credit would be.
- **Project Types:** Fuels would be required to be transportation grade — suitable for use in a highway vehicle or aircraft — but could be used for any business purpose, including as transportation fuel, industrial fuel, or for residential or commercial heat.
- Cannot claim both the 45Z credit and the 45Q, 45V, or the 48 ITC for clean hydrogen in a given tax year.
- **Key dates:** Applies to the production of qualified fuel after 2024. Credit sunsets for fuel sold after 2027.

Overview of European Union funding

Introduction to EU Green Deal Action Plan and new funding perspective



Net zero industrial act — NIZA

Objectives:

- **Improving investment** certainty, policy focus and coordination through the setting of clear objectives and monitoring mechanisms;
- **Lowering administrative burden** by streamlining administrative requirements and facilitating permitting, setting up regulatory sandboxes;
- **Facilitating access to markets** by specific measures related to public demand through public procurement procedures and auctions, as well as through schemes to supports private demand by consumers;
- **Facilitating and enabling carbon capture and storage projects**, including by enhancing the availability of CO₂ storage sites;
- **Supporting** innovation, including through regulatory sandboxes;
- **Enhancing skills for net-zero technologies.**

Numerical objectives for each products

The Commission's ambition is to develop sufficient domestic manufacturing capacity for the EU market:

- 40% for photovoltaic panels,
- 85% for wind turbines,
- 60% for heat pumps,
- 85% for batteries,
- 50% for electrolyzers

Increase the target in the Renewable Energy Directive to 45% by 2030 and the target in the Energy Efficiency Directive to 13%.

Total renewable energy generation capacities to 1236 GW by 2030, in comparison to 1067 GW by 2030 envisaged under the 2021 proposal.



Solar photovoltaic
And solar thermal



Electrolysers
and fuel cells



Onshore wind and
offshore renewables



Sustainable
biogas/biomethane



Batteries
and storage



Carbon capture
and storage

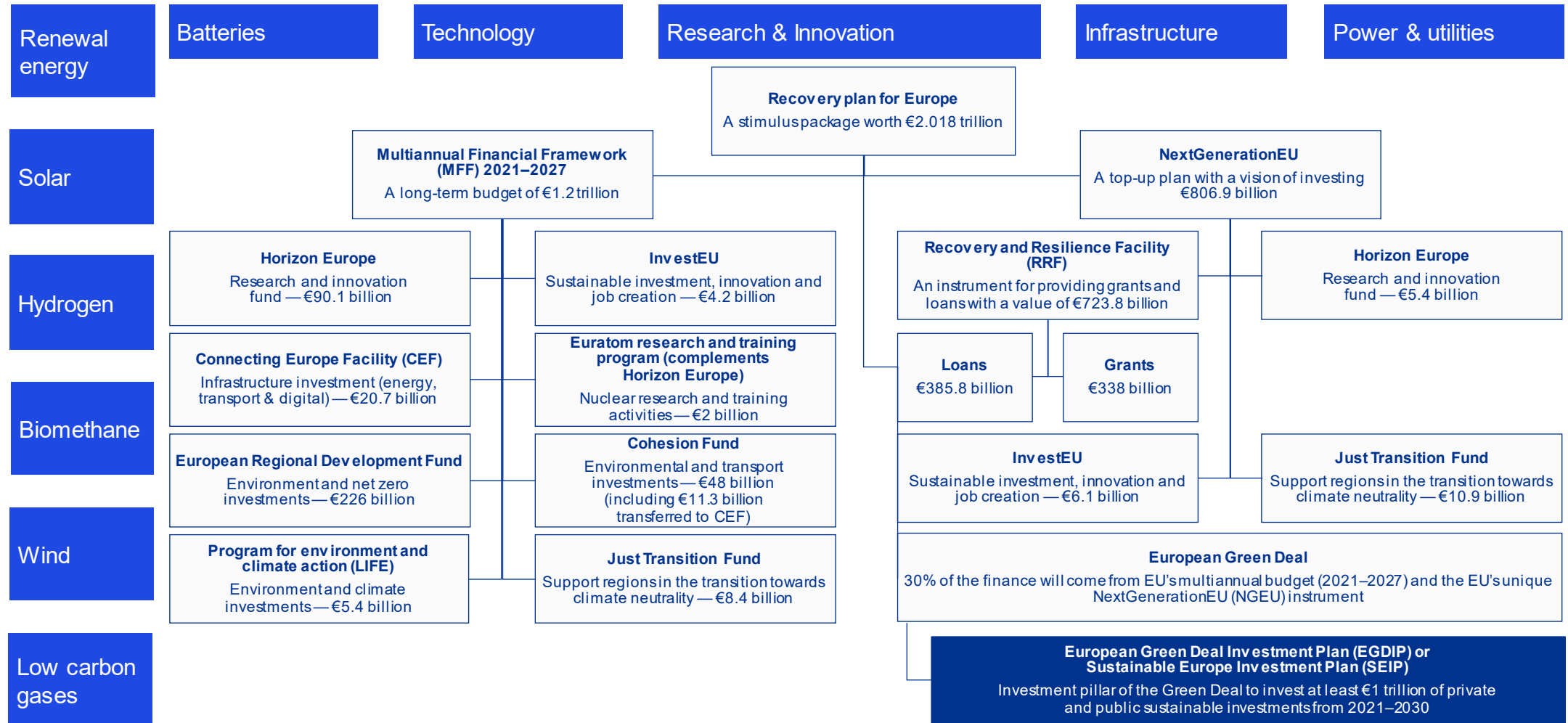


Heat pumps and
geothermal energy



Grid
technologies

EU Funding programs applying to energy sector



What's next in this space?

What's next?

Consider other tax and non-tax credits, grants, loans, and incentives programs for holistic planning purposes



The current IRA legislative statutes and additional guidance provided to date from Treasury still leave **many unanswered nuances — taxpayers are awaiting additional guidance.**

Time to reevaluate — post-IRA impacts:

- **New methods for monetization:** traditional tax equity structure vs. transfer and/or direct pay
- **Extension/revision of prior existing programs**
- **New requirements:** Prevailing wage & apprenticeships requirement, domestic content requirement, reference to other existing programs
- **Interaction with BEPS Pillar Two**

Interactions between tax incentives and BEPS Pillar Two

**BEPS Pillar Two —
Sets out global minimum
tax rules designed to
help ensure that large
multinational
businesses pay a
minimum effective rate
of tax of 15% on profits in
all countries.**



There is a question of the application of the definition of a Qualified Refundable Tax Credit (QRTC) to various credits under the US IRA where such credits are monetizable by selling the credit within four years of satisfying the relevant conditions under the IRA.

Currently, the OECD takes the view that the credit must be paid in cash or cash equivalents from the jurisdiction providing the credit. On this basis, the QRTC would not apply to third-party monetizable credits.

An alternative interpretation is that only the conditions for the credit relate to the laws of the relevant jurisdiction. This issue has been under discussion with the OECD Secretariat without resolution to date.

- QRTCs vs Non-QRTCs, the latter of which have greater potential for top-up tax -> issue as to whether 'monetizable' could be construed as refundable?

Q&A and wrap-up

Questions



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