

## Long-term decarbonized power Auction

### Study Committee 5 – PS2

Question.2.4 What changes to capacity market design are required to assist in achieving carbon neutrality and to effectively priorities renewable energy generation in a multi-source or hybrid procurement? Is this a role of capacity markets? Is there a possibility of using a double-sided auction in the capacity market where multiple buyers and multiple sellers bid simultaneously? What is the possible market design in such a case including price discovery?

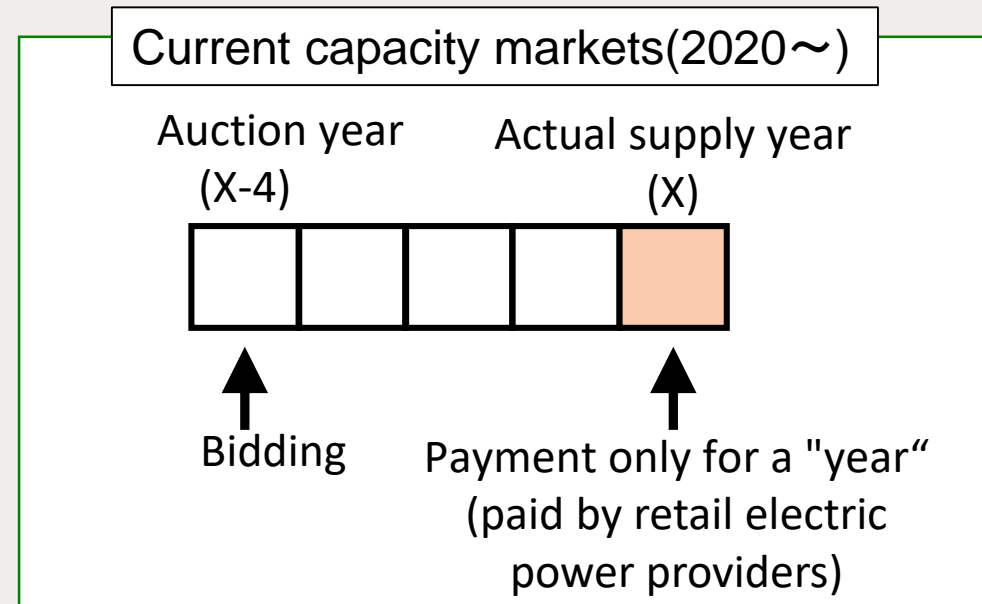
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## Problem for current capacity markets in Japan

- Current capacity markets assess supply capacity only for a "year" after four years, long-term revenue projections are difficult.
- That is the biggest factor that causes those who invest in power sources to hesitate in making a decision to invest in new power sources.

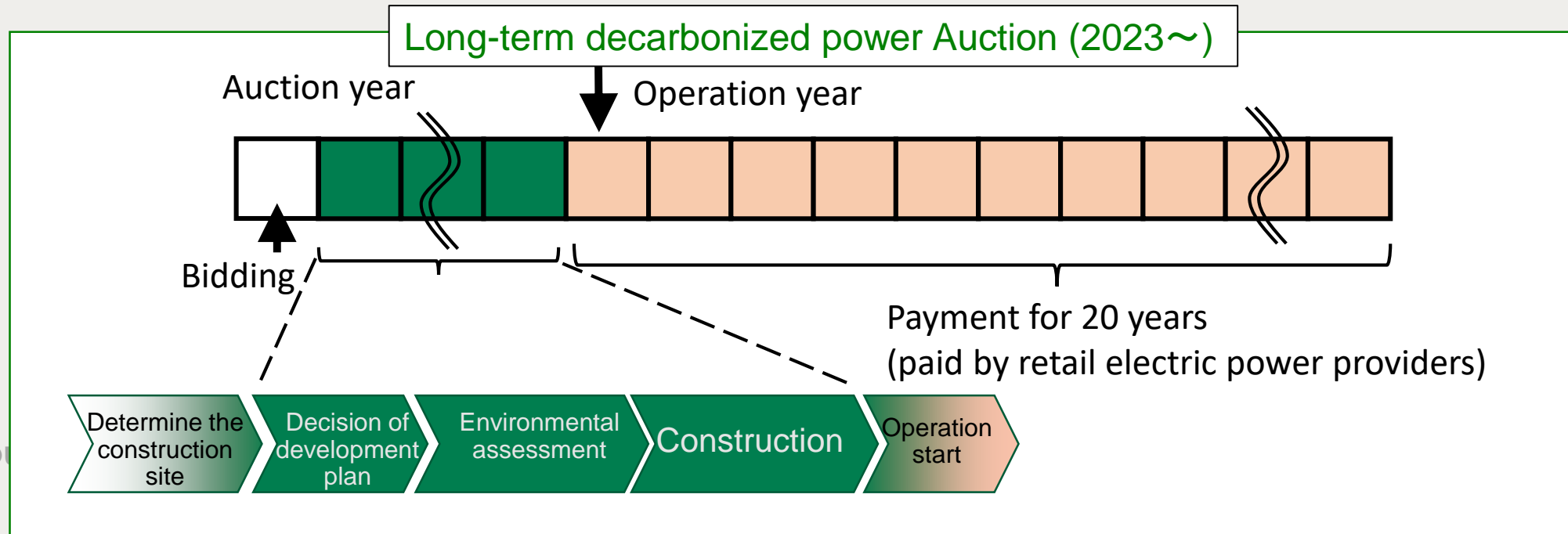


It is necessary to support the establishment of new power sources by ensuring the predictability of fixed cost recovery.



# New mechanism to secure long-term supply capacity (kW) and assist in achieving carbon neutrality

- The target is new investment in power source which does not emit CO<sub>2</sub>, renewable energy and nuclear power are also applicable, excluding thermal resources (coal, LNG, oil).
- In order to promote investment in various decarbonized power sources, it is set as the deadline for requesting the start of supply power for each type of power source.



## Target for Long-term decarbonized power Auction

- The minimum bid capacity is 100,000 kW, where the initial investment is expected to exceed 10 billion JPY.
- As a "separate frame" from decarbonized power sources, LNG is also temporally targeted from the viewpoint of securing supply capacity.
  - At least 20% of ammonia and 10% of hydrogen must be mixed combusted initially.
  - The way to exclusive combustion of ammonia and hydrogen is also required.

Power Supply Type	Current capacity markets	Long-term decarbonized power Auction	
Installation and replacement other than batteries	1,000 kW	100,000 kW	Total capacity
Renovation of existing thermal power plants for mixed combustion of ammonia and hydrogen*		50,000 kW	Mixed combustion: equivalent to kW
storage batteries		10,000 kW	Total capacity

\* limited to about 1/4 of the total volume.

