

What is claimed is:

1. A method for carbon recording and trading based on a block chain, comprising:
obtaining data related to carbon behaviors of a plurality of objects;
converting the data related to the carbon behaviors of the plurality of objects to corresponding carbon data of the plurality of objects, respectively;
transmitting the carbon data to a block chain platform for storage;
performing, based on the carbon data, a carbon trading between two objects in the plurality of objects or between one object in the plurality of objects and a third party object not belonging to the plurality of objects; and
distributing the carbon trading to the block chain platform as a block chain transaction;
wherein the plurality of objects include a first object, data related to the carbon behaviors of the first object includes a distance travelled by the first object, and the carbon data of the first object includes a carbon emission reduction amount of the first object.
2. The method according to claim 1, wherein converting the data related to the carbon behaviors of the plurality of objects to corresponding carbon data of the plurality of objects comprises
transmitting the data related to the carbon behaviors of the plurality of objects to a first smart contract entity on the block chain platform, respectively, the first smart contract entity converting the data related to the carbon behaviors of the plurality of objects to the corresponding carbon data of the plurality of objects, respectively and transmitting the carbon data to the block chain platform.
3. The method according to claim 1, wherein the plurality of objects include a second object, data related to the carbon behaviors of the second object includes a usage amount of an emission source of the second object, and the carbon data of the second object includes a carbon emission amount of the second object.
4. The method according to claim 3, wherein converting the data related to the carbon behaviors of the plurality of objects to corresponding carbon data of the

plurality of objects comprises

calculating the carbon emission reduction amount of the first object based on a baseline emission amount of the first object and a project emission amount of the first object, the baseline emission amount of the first object indicating a presumed emission amount of the first object under a baseline behavior and the project emission amount indicating an actual emission amount of the first object under an emission reduction behavior.

5. The method according to claim 4, wherein converting the data related to the carbon behaviors of the plurality of objects to corresponding carbon data of the plurality of objects comprises

calculating the carbon emission amount of the second object based on the usage amount of the emission source of the second object and an emission factor corresponding to the emission source, the usage amount of the emission source indicating an amount of the emission source consumed by the second object and the emission factor corresponding to the emission source indicating a coefficient of generating carbon emission during consumption of the emission source.

6. The method according to claim 3, wherein performing a carbon trading between the two objects in the plurality of objects based on the carbon data comprises

performing the carbon trading between the first object and the second object based on the carbon emission reduction amount of the first object and the carbon emission amount of the second object.

7. The method according to claim 3, wherein performing a carbon trading between the two objects in the plurality of objects based on the carbon data comprises

transmitting the carbon emission reduction amount of the first object and the carbon emission amount of the second object to a second smart contract entity on the block chain platform, the second smart contract entity performing the carbon trading between the first object and the second object based on the carbon emission reduction amount of the first object and the carbon emission amount of the second object.

8. The method according to claim 1, wherein transmitting the carbon data to a

block chain platform for storage comprises

performing a Hash operation on the carbon data to obtain a Hashed value of the carbon data; and

transmitting the Hashed value of the carbon data to the block chain platform for storage.

9. The method according to claim 3, wherein the first object includes at least one of: a Battery Electric Vehicle (BEV), a Hybrid Electrical Vehicle (HEV) and a public bicycle, or a user of the BEV, HEV or the public bicycle, and the second object includes an enterprise with an excessive carbon emission.

10. The method according to claim 1, further comprising:

converting the corresponding carbon data of the plurality of objects to corresponding carbon assets of the plurality of objects, and

wherein performing, based on the carbon data, a carbon trading between the two objects in the plurality of objects or between one object in the plurality of objects and a third party object not belonging to the plurality of objects comprises

performing the carbon trading between the two objects based on the carbon assets of the two objects or performing the carbon trading between the one object and the third party object based on the carbon asset of the one object in the plurality of objects.

11. The method according to claim 10, wherein the two objects includes a first object with a positive carbon asset and a second object with a negative carbon asset, and wherein performing the carbon trading between the two objects based on the carbon assets of the two objects comprises

obtaining a first amount of carbon asset from the first object and providing the first object with a reward corresponding to the first amount of carbon asset; and

providing a second amount of carbon asset to the second object and charging an income corresponding to the second amount of carbon asset from the second object.

12. The method according to claim 10, wherein the one object includes a first object with a positive carbon asset, and wherein performing the carbon trading

between the one object and the third party object based on the carbon asset of the one object comprises

obtaining a first amount of carbon asset from the first object and providing the first object with a reward corresponding to the first amount of carbon asset; and

providing a second amount of carbon asset to the third party object and charging an income corresponding to the second amount of carbon asset from the third party object.

13. The method according to claim 1, further comprising:

updating the carbon data of the two objects or the one object after the carbon trading; and

transmitting the updated carbon data to the block chain platform for storage.

14. A device for carbon recording and trading based on a block chain, comprising:

a processor configured to: obtain data related to carbon behaviors of a plurality of objects, convert the data related to the carbon behaviors of the plurality of objects to corresponding carbon data of the plurality of objects, respectively, and transmit the carbon data to a block chain platform for storage, and

the processor further configured to: perform, based on the carbon data, a carbon trading between two objects in the plurality of objects or between one object in the plurality of objects and a third party object not belonging to the plurality of objects, and distribute the carbon trading to the block chain platform as a block chain transaction.

15. A nonvolatile computer-readable medium for carbon recording and trading based on a block chain, comprising:

computer program codes for obtaining data related to carbon behaviors of a plurality of objects;

computer program codes for converting the data related to the carbon behaviors of the plurality of objects to corresponding carbon data of the plurality of objects, respectively;

computer program codes for transmitting the carbon data to a block chain

platform for storage;

computer program codes for performing, based on the carbon data, a carbon trading between two objects in the plurality of objects or between one object in the plurality of objects and a third party object not belonging to the plurality of objects; and

computer program codes for distributing the carbon trading to the block chain platform as a block chain transaction.

16. A method for carbon recording and trading based on a block chain, comprising:

converting, using a first smart contract, data related to carbon behaviors of a plurality of objects to corresponding carbon data of the plurality of objects, respectively, and transmitting, using the first smart contract, the carbon data to a block chain platform for storage; and

performing, using a second smart contract, a carbon trading between two objects in the plurality of objects or between one object in the plurality of objects and a third party object not belonging to the plurality of objects based on the carbon data, and distributing, using the second smart contract, the carbon trading to the block chain platform as a block chain transaction;

wherein the plurality of objects include a first object, data related to the carbon behaviors of the first object includes a distance travelled by the first object, and the carbon data of the first object includes a carbon emission reduction amount of the first object.

17. The method according to claim 16, wherein the plurality of objects include a second object, data related to the carbon behaviors of the second object includes a usage amount of an emission source of the second object, and the carbon data of the second object includes a carbon emission amount of the second object.

18. The method according to claim 17, wherein performing, using a second smart contract, a carbon trading between the two objects in the plurality of objects based on the carbon data comprises

performing, using the second smart contract, the carbon trading between the first object and the second object based on the carbon emission reduction amount of the first object and the carbon emission amount of the second object.

19. The method according to claim 17, wherein the first object includes at least one of: a Battery Electric Vehicle (BEV), a Hybrid Electrical Vehicle (HEV) and a public bicycle, or a user of the BEV, HEV or the public bicycle, and the second object includes an enterprise with an excessive carbon emission.

20. The method according to claim 17, wherein converting, using the first smart contract, the data related to the carbon behaviors of the plurality of objects to corresponding carbon data of the plurality of objects comprises

calculating, using the first smart contract, the carbon emission reduction amount of the first object based on a baseline emission amount of the first object and a project emission amount of the first object, the baseline emission amount of the first object indicating a presumed emission amount of the first object under a baseline behavior and the project emission amount indicating an actual emission amount of the first object under an emission reduction behavior.

21. The method according to claim 18, wherein converting, using the first smart contract, the data related to the carbon behaviors of the plurality of objects to corresponding carbon data of the plurality of objects comprises

calculating, using the first smart contract, the carbon emission amount of the second object based on the usage amount of the emission source of the second object and an emission factor corresponding to the emission source, the usage amount of the emission source indicating an amount of the emission source consumed by the second object and the emission factor corresponding to the emission source indicating a coefficient of generating carbon emission during consumption of the emission source.

22. The method according to claim 15, further comprising:

converting, using the first smart contract, the corresponding carbon data of the plurality of objects to corresponding carbon assets of the plurality of objects, and

wherein performing, using a second smart contract, based on the carbon data, a

carbon trading between two objects in the plurality of objects or between one object in the plurality of objects and a third party object not belonging to the plurality of objects comprises:

performing, using the second smart contract, the carbon trading between the two objects based on the carbon assets of the two objects or performing the carbon trading between the one object and the third party object based on the carbon asset of the one object in the plurality of objects.

23. The method according to claim 22, wherein the two objects includes a first object with a positive carbon asset and a second object with a negative carbon asset, and wherein performing, using the second smart contract, the carbon trading between the two objects based on the carbon assets of the two objects comprises

obtaining a first amount of carbon asset from the first object and providing the first object with a reward corresponding to the first amount of carbon asset; and

providing a second amount of carbon asset to the second object and charging an income corresponding to the second amount of carbon asset from the second object.

24. The method according to claim 22, wherein the one object includes a first object with a positive carbon asset, and wherein performing, using the second smart contract, the carbon trading between the one object and the third party object based on the carbon asset of the one object comprises

obtaining a first amount of carbon asset from the first object and providing the first object with a reward corresponding to the first amount of carbon asset; and

providing a second amount of carbon asset to the third party object and charging an income corresponding to the second amount of carbon asset from the third party object.

25. The method according to claim 16, further comprising:

updating the carbon data of the two objects or the one object after the carbon trading; and

transmitting the updated carbon data to the block chain platform for storage.

26. A block chain node for carbon recording and trading based on a block chain,

comprising:

a processor configured to convert, using a first smart contract, data related to carbon behaviors of a plurality of objects to corresponding carbon data of the plurality of objects, respectively, and transmit, using the first smart contract, the carbon data to a block chain platform for storage, and

wherein the processor is further configured to perform, using a second smart contract, a carbon trading between two objects in the plurality of objects or between one object in the plurality of objects and a third party object not belonging to the plurality of objects based on the carbon data, and distribute, using the second smart contract, the carbon trading to the block chain platform as a block chain transaction.

27. A nonvolatile computer readable medium for carbon recording and trading based on a block chain, comprising:

computer program codes for converting, using a first smart contract, data related to carbon behaviors of a plurality of objects to corresponding carbon data of the plurality of objects, respectively;

computer program codes for transmitting, using the first smart contract, the carbon data to a block chain platform for storage;

computer program codes for performing, using a second smart contract, a carbon trading between two objects in the plurality of objects or between one object in the plurality of objects and a third party object not belonging to the plurality of objects based on the carbon data; and

computer program codes for distributing, using the second smart contract, the carbon trading to the block chain platform as a block chain transaction.

28. A system for carbon recording and trading based on a block chain, comprising:

a processor configured to obtain data related to carbon behaviors of a plurality of objects;

a first smart contract entity configured to convert, using a first smart contract, the data related to the carbon behaviors of the plurality of objects to corresponding carbon

data of the plurality of objects, respectively, and transmit, using the first smart contract, the carbon data to a block chain platform for storage; and

a second smart contract entity configured to perform, using a second smart contract, a carbon trading between two objects in the plurality of objects or between one object in the plurality of objects and a third party object not belonging to the plurality of objects based on the carbon data, and distribute, using the second smart contract, the carbon trading to the block chain platform as a block chain transaction;

wherein the plurality of objects include a first object, data related to the carbon behaviors of the first object includes a distance travelled by the first object, and the carbon data of the first object includes a carbon emission reduction amount of the first object.

29. The system according to claim 28, wherein the plurality of objects include a second object, data related to the carbon behaviors of the second object includes a usage amount of an emission source of the second object, and the carbon data of the second object includes a carbon emission amount of the second object.

30. The system according to claim 29, wherein the second smart contract entity is configured to perform, using the second smart contract, the carbon trading between the first object and the second object based on the carbon emission reduction amount of the first object and the carbon emission amount of the second object.

31. The system according to claim 28, wherein the first smart contract entity is configured to calculate, using the first smart contract, the carbon emission reduction amount of the first object based on a baseline emission amount of the first object and a project emission amount of the first object, the baseline emission amount of the first object indicating a presumed emission amount of the first object under a baseline behavior and the project emission amount indicating an actual emission amount of the first object under an emission reduction behavior.

32. The system according to claim 29, wherein the first smart contract entity is configured to calculate, using the first smart contract, the carbon emission amount of the second object based on the usage amount of the emission source of the second

object and an emission factor corresponding to the emission source, the usage amount of the emission source indicating an amount of the emission source consumed by the second object and the emission factor corresponding to the emission source indicating a coefficient of generating carbon emission during consumption of the emission source.

33. The system according to claim 28, wherein the processor is further configured to perform a Hash operation on the carbon data to obtain a Hashed value of the carbon data, and transmit the Hashed value of the carbon data to the block chain platform for storage.

34. The system according to claim 28, wherein the first smart contract entity is further configured to convert, using the first smart contract, the corresponding carbon data of the plurality of objects to corresponding carbon assets of the plurality of objects, and

wherein the second smart contract entity is further configured to perform, using the second smart contract, a carbon trading between the two objects based on the carbon assets of the two objects or perform a carbon trading between the one object and the third party object based on the carbon asset of the one object.

35. The system according to claim 34, wherein the two objects includes a first object with a positive carbon asset and a second object with a negative carbon asset, and wherein the second smart contract entity is further configured to

obtain a first amount of carbon asset from the first object and provide the first object with a reward corresponding to the first amount of carbon asset; and

provide a second amount of carbon asset to the second object and charge an income corresponding to the second amount of carbon asset from the second object.

36. The system according to claim 34, wherein the one object includes a first object with a positive carbon asset, and wherein the second smart contract entity is further configured to

obtain a first amount of carbon asset from the first object and provide the first object with a reward corresponding to the first amount of carbon asset; and

provide a second amount of carbon asset to the third party object and charge an income corresponding to the second amount of carbon asset from the third party object.

37. The system according to claim 28, wherein the second smart contract entity is further configured to

update the carbon data of the two objects or the one object after the carbon trading;
and

transmit the updated carbon data to the block chain platform for storage.