Block Creation

As soon as the Execution Client receives a new execution block, it starts working on a candidate for the next block, whether it is ever used or not. The potential next execution block is always available for fetch by the beacon client using local RPC connection.

When beacon client receives notice from farmer that we have found the proof of space and we are able to create new block, the following procedure takes place:

- Beacon client grabs the transactions and block hash from the execution client and adds them to the beacon block as an execution payload (local RPC)
- Beacon client broadcasts the beacon block over the block gossip protocol (beacon clients p2p network)
- Other beacon clients receive the block via the block gossip protocol and validate it

Block Rewards

In most cryptocurrencies, the creator of a block pays themselves based on the *current* block reward. In BPX, there is a slight difference - block rewards are paid in a *future* block, depending on whether the farmer's block is a transaction block or not.

- Option 1: If the farmer's block is a transaction block, the farmer will get paid on the next transaction block.
- Option 2: If the farmer's block is not a transaction block, the farmer will get paid on the next transaction block after the next transaction block (next next).

On the other hand, the priority part of transaction fees is paid in the current block. The base part is burned in accordance with the assumptions of EIP-1559.

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