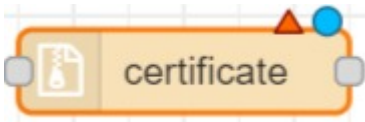


# Node: Certificate

Bei erfolgreicher Validierung wird das angeforderte Zertifikat/Beleg aus der **GHG Wallet** ausgegeben.



Als Eingabe wird der Hash eines Zertifikates im `msg.payload` übergeben. Ist das Zertifikat in der GHG Wallet gespeichert und valide, so wird es auf der Ausgabe im `msg.payload` bereitgestellt.

## Beispiel Flow

Download: [simple\\_certificate.flow.json](#)



**Hinweis:** Zur Verwendung des Beispiels muss im Inject-Node "Certificate Hash" der Wert eines in der GHG Wallet gespeicherten Zertifikates angegeben werden. Eine Liste aller in der GHG Wallet gespeicherten Zertifikate kann mit dem **Certificates Node** abgerufen werden.

### Ausgabe (Beleg)

```
{
  "hash": {

    "signature": "0x558a9d229825153511c20d4242b6772c186219c2fa6787fa684dc851bf48879751a30881c8f
bf554bdfcf08c30acf4d034e92a6bbd27debb45371d76dee7be3d1c",
    "payload": "0xae809bc0a0695356ec850baf96eada931b21d717fa593baa683180f36d0e4a98"
  },
  "owner": {

    "signature": "0x57309a13023882d510eaae2537433f7272dacbbef8c149f86b3365946bc55a6412ddc4c2b13
823badd073548d16ff51a55a87cc2060e2c644242c7d87997fa951b",
```

```

    "payload": {
      "owner": "0x48a2F735c6BC140C15109f5a8AFF8010715D9ddb",
      "issuer": "0xE7Fe0626D7B8e3F2e5ECD146F9b11daac1DBE447",
      "hash": "0xae809bc0a0695356ec850baf96eada931b21d717fa593baa683180f36d0e4a98"
    }
  },
  "context": {

    "signature": "0xafdb01935aae5a2da5af49db2f723c1649dc8ce92913cc8521a5b587df9e8ba24a9cdd3f54514b1868b15580d0ed21d9530cca623c532c874d4addfdd5934be51c",
    "payload": ""
  },
  "did": {

    "signature": "0x980692bbbe76d52be558ef4fa2b5c9ad75e04e05a5256a051e2b9e65c97889143ef3066afa908e65da0e1acac62cbf38b7308ff8a3bcc8740d23193776b2864f1c",
    "payload": {

      "url": "did: ethr: 6226: 0x3bFCf4Fe3b7D2E2fd079b5Dd546Aa30300D8fBE1: 0x6a2385Bae7fbc38FF23d475B9D3eB93EEFB7A843",
      "registry": "0x3bFCf4Fe3b7D2E2fd079b5Dd546Aa30300D8fBE1",
      "uid": "0x6a2385Bae7fbc38FF23d475B9D3eB93EEFB7A843",
      "schema": "did",
      "method": "ethr: 6226",
      "ghgtoken": {
        "address": "0x36AbF05ac533D9Bb2024A2fb00c9e3F52e4F6a50",
        "certificates": "0x65297AFaf11eeAd5258A46e969c2341708e9CC59",
        "savings": "0xc475EcB54601C676Ad008A7857A385a52c445244",
        "emissions": "0xd37B668Ad0417EcD22472ca555a431e84afB40BB"
      },
      "nft": {

        "signature": "0x75d2def771a6c4c519eaab524a32075bca21add4ded8fc79319994d0fad8cff35e9345e131b92d06da395aa8031d8698f655c9b2919f26da9a4bb75e5f2d119f1b",
        "payload": {
          "address": "0x65297AFaf11eeAd5258A46e969c2341708e9CC59",
          "tx": {
            "nonce": 2223,
            "gasPrice": {

```

[illegible]

[illegible]

```
"transactionHash": "0x14cd7b1c5aef88efe46d600b2bc1ddee10efb1ef0775937f40077ee0a471566d",
    "address": "0xc475EcB54601C676Ad008A7857A385a52c445244",
    "topics": [

"0xddf252ad1be2c89b69c2b068fc378daa952ba7f163c4a11628f55a4df523b3ef",

"0x0000000000000000000000000000000000000000000000000000000000000000",

"0x0000000000000000000000000000000000000000000000000000000000000000"

    ],

    "data": "0x0000000000000000000000000000000000000000000000000000000000000000",
    "logIndex": 1,

    "blockHash": "0xfa739b792fddac6eb84a1fef7bc3f51890539beddaa0c467909694e7485d5c5"
    },
    {
        "transactionIndex": 0,
        "blockNumber": 649121,

        "transactionHash": "0x14cd7b1c5aef88efe46d600b2bc1ddee10efb1ef0775937f40077ee0a471566d",
        "address": "0xd37B668Ad0417EcD22472ca555a431e84afB40BB",
        "topics": [

"0xddf252ad1be2c89b69c2b068fc378daa952ba7f163c4a11628f55a4df523b3ef",

"0x0000000000000000000000000000000000000000000000000000000000000000",

"0x0000000000000000000000000000000000000000000000000000000000000000"

        ],

        "data": "0x0000000000000000000000000000000000000000000000000000000000000000",
        "logIndex": 2,

        "blockHash": "0xfa739b792fddac6eb84a1fef7bc3f51890539beddaa0c467909694e7485d5c5"
    }
    ],
    "blockNumber": 649121,
    "confirmations": 1,
```

```

        "cumulativeGasUsed": {
            "type": "BigNumber",
            "hex": "0x0291a8"
        },
        "effectiveGasPrice": {
            "type": "BigNumber",
            "hex": "0x03e8"
        },
        "status": 1,
        "type": 0,
        "byzantium": true
    },

    "tokenId": "0x0000000000000000000000000000000000000000000000000000000000000046f"
    },
    {
        "hash": "0xae809bc0a0695356ec850baf96eada931b21d717fa593baa683180f36d0e4a98"
    }
},
"metering": {

"signature": "0x976ccbce77896d6c16687c9304b27ac04cf4e2fc6cbef500ca5f90f1601100a6498502fbe4b
c442136f32abe5e77934cc7d15538bbf13105f07669483b0cd8d31c",
    "payload": {
        "owner": "0x48a2f735c6BC140C15109f5a8AFF8010715D9ddb",
        "counter": 1673222561407,
        "time": 1673222562089,

"signature": "0x01e9b9cfe0125a988e72021d761cd81fbc390c086eba2af23dc36d63f33b6dc47f7fcd52ba0
4e3e1c744f8a86f064047635476291f123a9801b078e7d84d5ae01c",
        "hash": "0xae809bc0a0695356ec850baf96eada931b21d717fa593baa683180f36d0e4a98"
    }
},
"presentations": {
    "type": {

"signature": "0xa6c27697b4f526292c5728d12f28d3f41d4dd278a1e134193332b5b1f25a133b42c94d06911
a81a250df03c11a5ed0454f6a9ede14807eb967b563ea2c1e94f1b",
        "payload": "electricity consumption from public grid",

```

```
    "$schema": "https://schema.corrently.io/tydids/type"
  },
  "context": {

    "signature": "0xafdb01935aae5a2da5af49db2f723c1649dc8ce92913cc8521a5b587df9e8ba24a9cdd3f54514b1868b15580d0ed21d9530cca623c532c874d4addfdd5934be51c",

    "payload": "",
    "$schema": "https://schema.corrently.io/tydids/context"
  },
  "location": {

    "signature": "0x0677e382a3e8b3845631506c6058beb706336ad3c142619852d5aed26a1570e6725b7ec61a4784c684aad74a6d3efbb5578f7127663d07bf8fc797f30a951b551b",

    "payload": {
      "zip": "00000",
      "city": "Landesweit (national)",
      "country": "Germany",
      "meloid": "DETESTSD133713371337133713371337",
      "hash": "0xae809bc0a0695356ec850baf96eada931b21d717fa593baa683180f36d0e4a98"
    },
    "$schema": "https://schema.corrently.io/tydids/location"
  },
  "metering": {

    "signature": "0x10adf436e9c88dc910ad9a0631e616f47876e52fa656f3bf228856eedf6b768b5ad99d0560b7e301e0f32836e5e729ae3705ad7bfbe7e9185dc56a583bb760c91c",

    "payload": {
      "owner": "0x48a2F735c6BC140C15109f5a8AFF8010715D9ddb",
      "counter": 1673222561407,
      "time": 1673222562089,

      "signature": "0x01e9b9cfe0125a988e72021d761cd81fbc390c086eba2af23dc36d63f33b6dc47f7fcd52ba04e3e1c744f8a86f064047635476291f123a9801b078e7d84d5ae01c",

      "hash": "0xae809bc0a0695356ec850baf96eada931b21d717fa593baa683180f36d0e4a98"
    },
    "$schema": "https://schema.corrently.io/tydids/metering"
  },
  "consumption": {
```

```
"signature": "0x933bfff8976818b95d25607729831b994e3dc477cfa7fe58c923fbc20454058ed2d260bcdd66
b0a0f895c2bf231b2eedb3063e8f856278ac1737af484bdaea4cf1b",
  "payload": {
    "unit": "wh",
    "actual": 0,
    "time": 1673222562089,
    "hash": "0xae809bc0a0695356ec850baf96eada931b21d717fa593baa683180f36d0e4a98"
  },
  "$schema": "https://schema.corrently.io/tydids/consumption"
},
"ghg": {

"signature": "0xb7bde2b1141b923a877a9372b5722562521ed418590a266021264955e9999d9d724cbc14eea
2e6f3f9367c95776c42c89cd240579e2b07aad04095845c2dc3aa1b",
  "payload": {
    "factors": {
      "unit": "g co2eq per wh",
      "actual": {
        "grid": 0.201,
        "eco": 0.201
      },
      "base": {
        "grid": 0.436
      }
    },
    "base": {
      "unit": "g co2eq",
      "grid": 0
    },
    "actual": {
      "unit": "g co2eq",
      "grid": 0,
      "eco": 0
    },
    "saving": {
      "unit": "g co2eq",
      "grid": 0
    },
    "scope": 2,
```



```
    "hash": "0xae809bc0a0695356ec850baf96eada931b21d717fa593baa683180f36d0e4a98"
  },
  "$schema": "https://schema.corrently.io/tydids/ghg"
},
"did": {

"signature": "0x2970bd4d7109bebfa006951bef2fca5dcc5380ce0b18f22d7a250b3a6e06c2b66622aeea8c9a463e864259a7e262baa71d34a218450e0af143a5e8ccebb7559b1c",

  "payload": {

"url": "did: ethr: 6226: 0x3bFCf4Fe3b7D2E2fd079b5Dd546Aa30300D8fBE1: 0x6a2385Bae7fbc38FF23d475B9D3eB93EEFB7A843",

    "registry": "0x3bFCf4Fe3b7D2E2fd079b5Dd546Aa30300D8fBE1",
    "uid": "0x6a2385Bae7fbc38FF23d475B9D3eB93EEFB7A843",
    "schema": "did",
    "method": "ethr: 6226",
    "ghgtoken": {
      "address": "0x36AbF05ac533D9Bb2024A2fb00c9e3F52e4F6a50",
      "certificates": "0x65297AFaf11eeAd5258A46e969c2341708e9CC59",
      "savings": "0xc475EcB54601C676Ad008A7857A385a52c445244",
      "emissions": "0xd37B668Ad0417EcD22472ca555a431e84afB40BB"
    },
    "nft": {

"signature": "0x75d2def771a6c4c519eaab524a32075bca21add4ded8fc79319994d0fad8cff35e9345e131b92d06da395aa8031d8698f655c9b2919f26da9a4bb75e5f2d119f1b",

    "payload": {
      "address": "0x65297AFaf11eeAd5258A46e969c2341708e9CC59",
      "tx": {
        "nonce": 2223,
        "gasPrice": {
          "type": "BigNumber",
          "hex": "0x03e8"
        },
        "gasLimit": {
          "type": "BigNumber",
          "hex": "0x02a50e"
        },
        "to": "0x36AbF05ac533D9Bb2024A2fb00c9e3F52e4F6a50",
```

[illegible]

[illegible]

```

    "0x0000000000000000000000000000000000000000000000000000000000000000",
    ],
    "data": "0x0000000000000000000000000000000000000000000000000000000000000000",
    "logIndex": 1,
    "blockHash": "0xfa739b792fddacf6eb84a1fef7bc3f51890539beddaa0c467909694e7485d5c5"
  },
  {
    "transactionIndex": 0,
    "blockNumber": 649121,
    "transactionHash": "0x14cd7b1c5aef88efe46d600b2bc1ddee10efb1ef0775937f40077ee0a471566d",
    "address": "0xd37B668Ad0417EcD22472ca555a431e84afB40BB",
    "topics": [
      "0xddf252ad1be2c89b69c2b068fc378daa952ba7f163c4a11628f55a4df523b3ef",
      "0x0000000000000000000000000000000000000000000000000000000000000000",
      "0x0000000000000000000000000000000000000000000000000000000000000000"
    ],
    "data": "0x0000000000000000000000000000000000000000000000000000000000000000",
    "logIndex": 2,
    "blockHash": "0xfa739b792fddacf6eb84a1fef7bc3f51890539beddaa0c467909694e7485d5c5"
  }
],
"blockNumber": 649121,
"confirmations": 1,
"cumulativeGasUsed": {
  "type": "BigNumber",
  "hex": "0x0291a8"
},
"effectiveGasPrice": {
  "type": "BigNumber",
  "hex": "0x03e8"
},

```

```
        "status": 1,
        "type": 0,
        "byzantium": true
    },

    "tokenId": "0x000000000000000000000000000000000000000000000000000000000000000046f"
    },
    {,
        "hash": "0xae809bc0a0695356ec850baf96eada931b21d717fa593baa683180f36d0e4a98"
    },
    {
        "$schema": "https://schema.corrently.io/tydids/did"
    },
    {
        "_all": {

            "signature": "0xa114055435fc8343fbb348a328f017adb5f8b264b4621d2acf19cb69e8072e79070e1da61ea2d686b5d08c78326425eda035780a457cf3ca195a7277143acabd1c",
            "payload": {
                "type": "electricity consumption from public grid",
                "context": "",
                "location": {
                    "zip": "00000",
                    "city": "Landesweit (national)",
                    "country": "Germany",
                    "meloid": "DETESTSD133713371337133713371337",
                    "hash": "0xae809bc0a0695356ec850baf96eada931b21d717fa593baa683180f36d0e4a98"
                },
                "metering": {
                    "owner": "0x48a2F735c6BC140C15109f5a8AFF8010715D9ddb",
                    "counter": 1673222561407,
                    "time": 1673222562089,

                    "signature": "0x01e9b9cfe0125a988e72021d761cd81fbc390c086eba2af23dc36d63f33b6dc47f7fcd52ba04e3e1c744f8a86f064047635476291f123a9801b078e7d84d5ae01c",
                    "hash": "0xae809bc0a0695356ec850baf96eada931b21d717fa593baa683180f36d0e4a98"
                },
                "consumption": {
                    "unit": "wh",
                    "actual": 0,
                    "time": 1673222562089,
```

```

    "hash": "0xae809bc0a0695356ec850baf96eada931b21d717fa593baa683180f36d0e4a98"
  },
  "ghg": {
    "factors": {
      "unit": "g co2eq per wh",
      "actual": {
        "grid": 0.201,
        "eco": 0.201
      },
      "base": {
        "grid": 0.436
      }
    },
    "base": {
      "unit": "g co2eq",
      "grid": 0
    },
    "actual": {
      "unit": "g co2eq",
      "grid": 0,
      "eco": 0
    },
    "saving": {
      "unit": "g co2eq",
      "grid": 0
    },
    "scope": 2,
    "hash": "0xae809bc0a0695356ec850baf96eada931b21d717fa593baa683180f36d0e4a98"
  },
  "_iat": 1673222562146,
  "_iss": "0xE7Fe0626D7B8e3F2e5ECD146F9b11daac1DBE447",
  "_jti": "0x6a2385Bae7fbc38FF23d475B9D3eB93EEFB7A843",
  "did": {

```

```

"url": "did:ethr:6226:0x3bFCf4Fe3b7D2E2fd079b5Dd546Aa30300D8fBE1:0x6a2385Bae7fbc38FF23d475B9D3eB93EEFB7A843",
    "registry": "0x3bFCf4Fe3b7D2E2fd079b5Dd546Aa30300D8fBE1",
    "uid": "0x6a2385Bae7fbc38FF23d475B9D3eB93EEFB7A843",
    "schema": "did",

```

```
"signature": "0x75d2def771a6c4c519eaab524a32075bca21add4ded8fc79319994d0fad8cff35e9345e131b92d06da395aa8031d8698f655c9b2919f26da9a4bb75e5f2d119f1b",
```

[illegible]

[illegible]



```
"0x0000000000000000000000000000000000000000000000000000000000000000",

"0x00000000000000000000000048a2f735c6bc140c15109f5a8aff8010715d9ddb",

"0x0000000000000000000000000000000000000000000000000000000000000046f"

    ],
    "data": "0x",
    "logIndex": 0,

"blockHash": "0xfa739b792fddacf6eb84a1fef7bc3f51890539beddaa0c467909694e7485d5c5"

    },
    {
        "transactionIndex": 0,
        "blockNumber": 649121,

"transactionHash": "0x14cd7b1c5aef88efe46d600b2bc1ddee10efb1ef0775937f40077ee0a471566d",
        "address": "0xc475EcB54601C676Ad008A7857A385a52c445244",
        "topics": [

"0xddf252ad1be2c89b69c2b068fc378daa952ba7f163c4a11628f55a4df523b3ef",

"0x0000000000000000000000000000000000000000000000000000000000000000",

"0x0000000000000000000000006a2385bae7fbc38ff23d475b9d3eb93eefb7a843"

    ],

"data": "0x0000000000000000000000000000000000000000000000000000000000000000",
        "logIndex": 1,

"blockHash": "0xfa739b792fddacf6eb84a1fef7bc3f51890539beddaa0c467909694e7485d5c5"

    },
    {
        "transactionIndex": 0,
        "blockNumber": 649121,

"transactionHash": "0x14cd7b1c5aef88efe46d600b2bc1ddee10efb1ef0775937f40077ee0a471566d",
        "address": "0xd37B668Ad0417EcD22472ca555a431e84afB40BB",
        "topics": [
```

```

"0xdddf252ad1be2c89b69c2b068fc378daa952ba7f163c4a11628f55a4df523b3ef",
"0x0000000000000000000000000000000000000000000000000000000000000000",
"0x0000000000000000000000000000000000000000000000000000000000000000",
    ],
    "data": "0x0000000000000000000000000000000000000000000000000000000000000000",
    "logIndex": 2,
    "blockHash": "0xfa739b792fddacf6eb84a1fef7bc3f51890539beddaa0c467909694e7485d5c5"
  }
],
  "blockNumber": 649121,
  "confirmations": 1,
  "cumulativeGasUsed": {
    "type": "BigNumber",
    "hex": "0x0291a8"
  },
  "effectiveGasPrice": {
    "type": "BigNumber",
    "hex": "0x03e8"
  },
  "status": 1,
  "type": 0,
  "byzantium": true
},
"tokenId": "0x0000000000000000000000000000000000000000000000000000000000000046f"
  }
},
  "hash": "0xae809bc0a0695356ec850baf96eada931b21d717fa593baa683180f36d0e4a98"
}
},
"$schema": "https://schema.corrently.io/tydids/_all"
}
}
}

```

## Quellcode der Implementierung

---

Revision #4

Created 9 January 2023 00:24:07 by Thorsten Zoerner

Updated 17 February 2023 10:02:44 by Thorsten Zoerner