

反応場分離型ターコイズ水素製造プロセス

Reaction field separation type Turquoise hydrogen production process

炭素の固定化もできる、新たなCO₂フリー水素製造法
 A new CO₂-free method of hydrogen production that can also immobilize carbon

■ 特長 FEATURES

■ ターコイズ水素とは

ターコイズ水素とは、水素の製造法のうち、メタンの熱分解により、「水素」と「固体炭素」を同時に製造して得られるCO₂フリーの水素。

What is turquoise hydrogen?

Turquoise hydrogen is a CO₂-free hydrogen manufactured in a method that simultaneously produces hydrogen and solid carbon through the pyrolysis of methane.

■ 低い温度で生成できる、高効率なプロセス

低温活性で長寿命な触媒を創成し、プロセスの低温化を実現。

A highly efficient process in which production is possible at low temperatures

A low temperature process is realized by creating a catalyst with low temperature activity and long life.

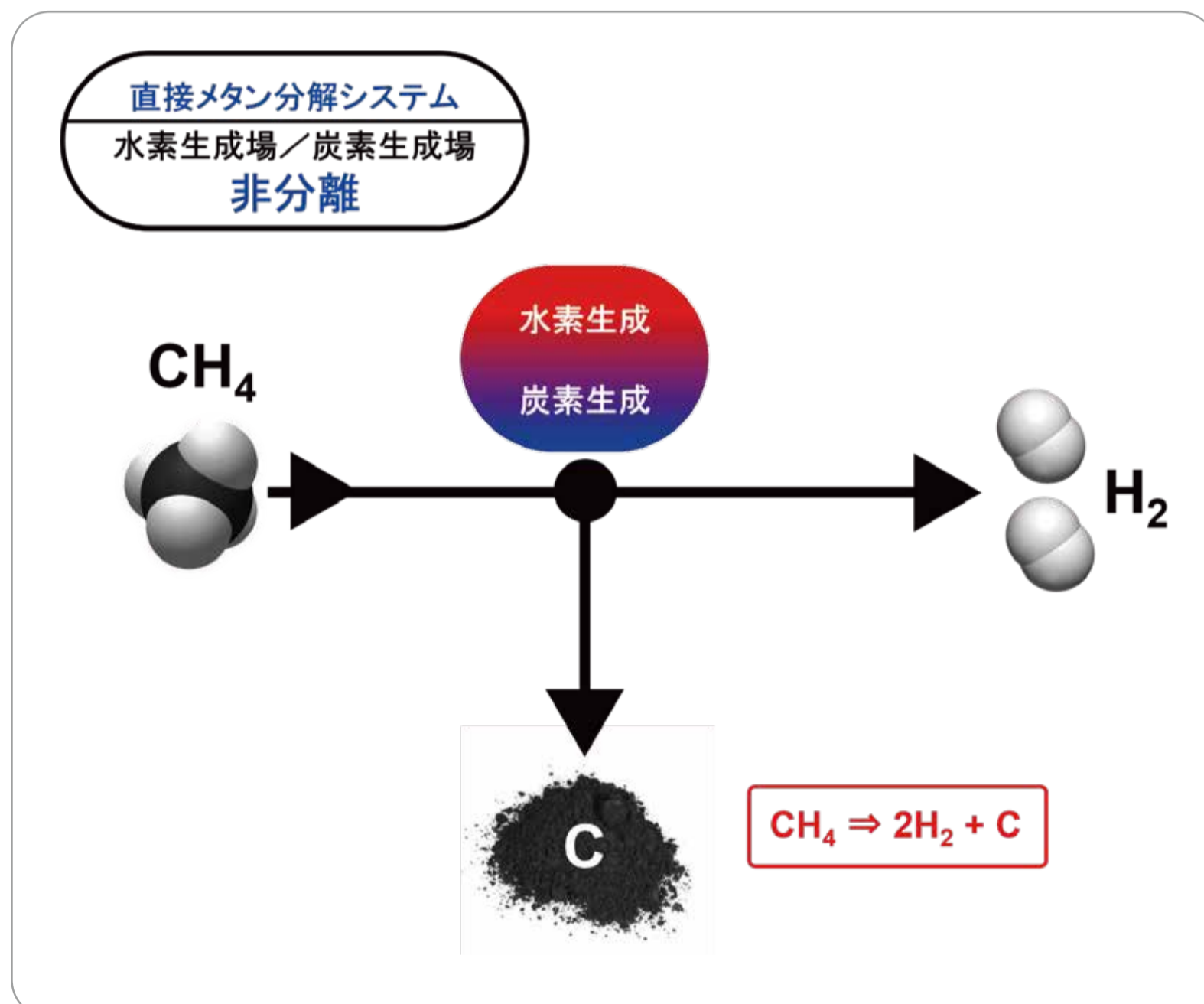
■ 付加価値の高い炭素を作り出すことが可能

本反応場分離型プロセスでは、メタン分解と炭素析出の反応炉を分離し、最適な温度・圧力等を制御することで、炭素の作り分けが可能。更にメタン分解触媒の炭素コーキングを抑制し触媒の長寿命化に寄与。

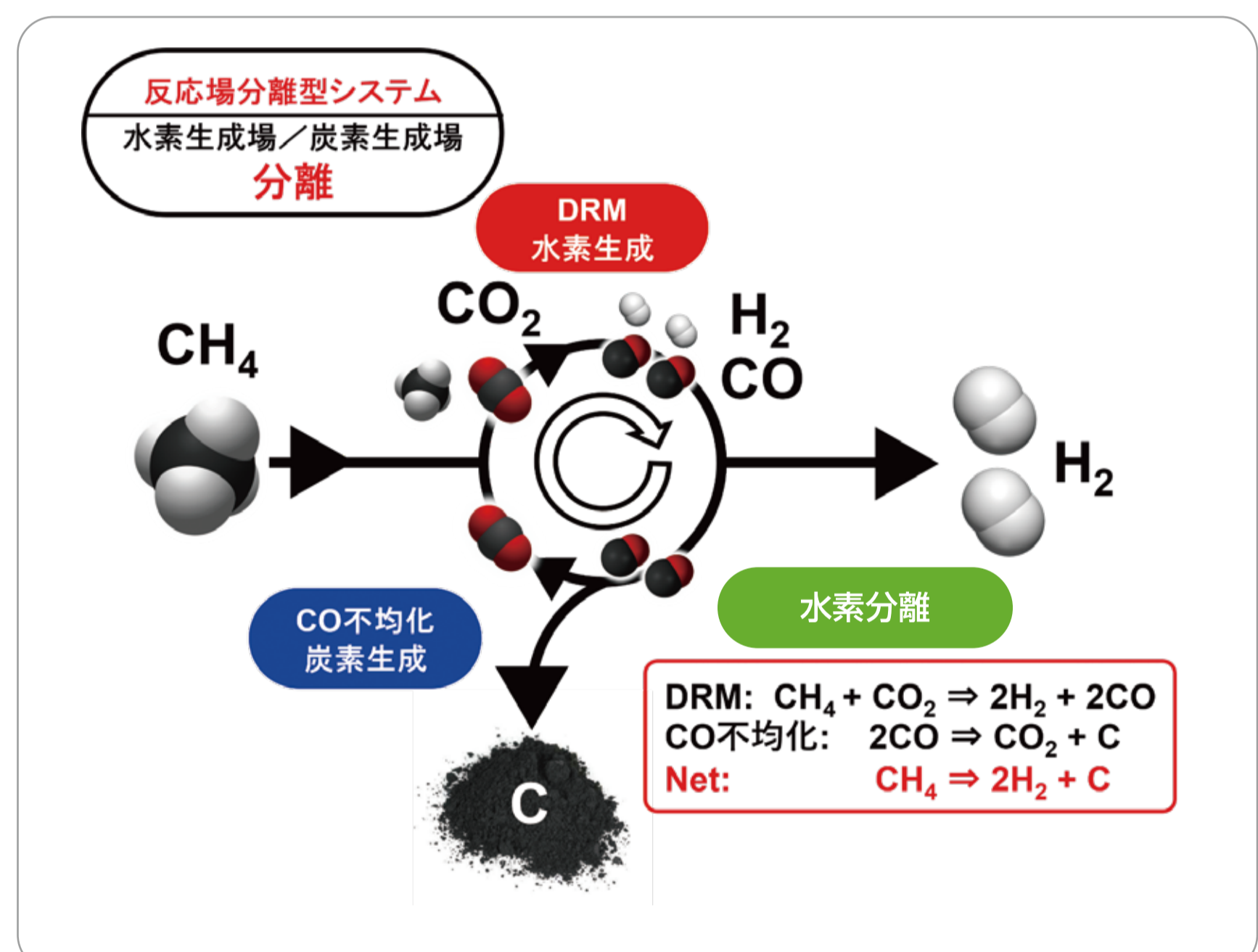
It is possible to produce high value-added carbon

In this reaction field separation type process, the reaction furnace for methane decomposition is separated from that for carbon deposition, and by controlling the optimum temperature and pressure, etc., carbon can be produced separately. In addition, the carbon caulking of the methane decomposition catalyst is suppressed, which contributes to a longer catalyst life.

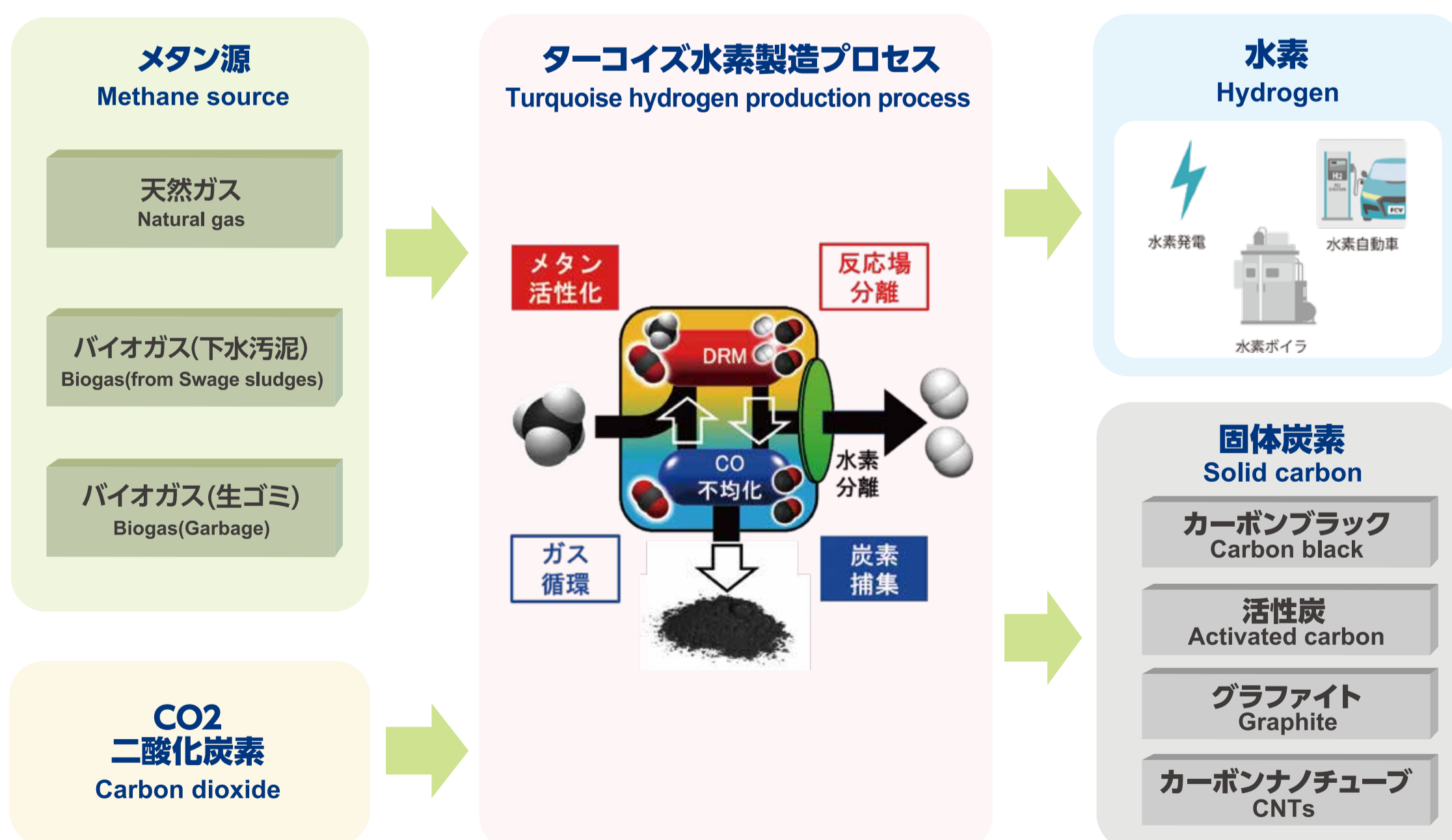
従来プロセス Conventional process



本プロセス Reaction field separation type process



■ システム展開イメージ System Deployment Concept



NEDO「エネルギー・環境新技術先導研究プログラム」で他機関(NIMS等)と開発を進行中

We have been developing in cooperation with other organizations (NIMS, etc.) in the NEDO "Feasibility Study Program on Energy and New Environmental Technology".

中規模実証を踏まえ、2026年の商用実証を目指す

The aim is commercial demonstration in 2026 based on a medium-scale demonstration.

メタン源(ガス・電力会社等)、水素・炭素メーカーとの協業に向け各社コンタクト中

We are in contact with various companies regarding possible cooperation with methane sources (gas and electric power companies, etc.) and hydrogen and carbon manufacturers.

お問い合わせは
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