

단과대학 특화전략사업 전문가특강

기후 변화와 친환경자동차 - 현황과 전망

2020. 10. 15.

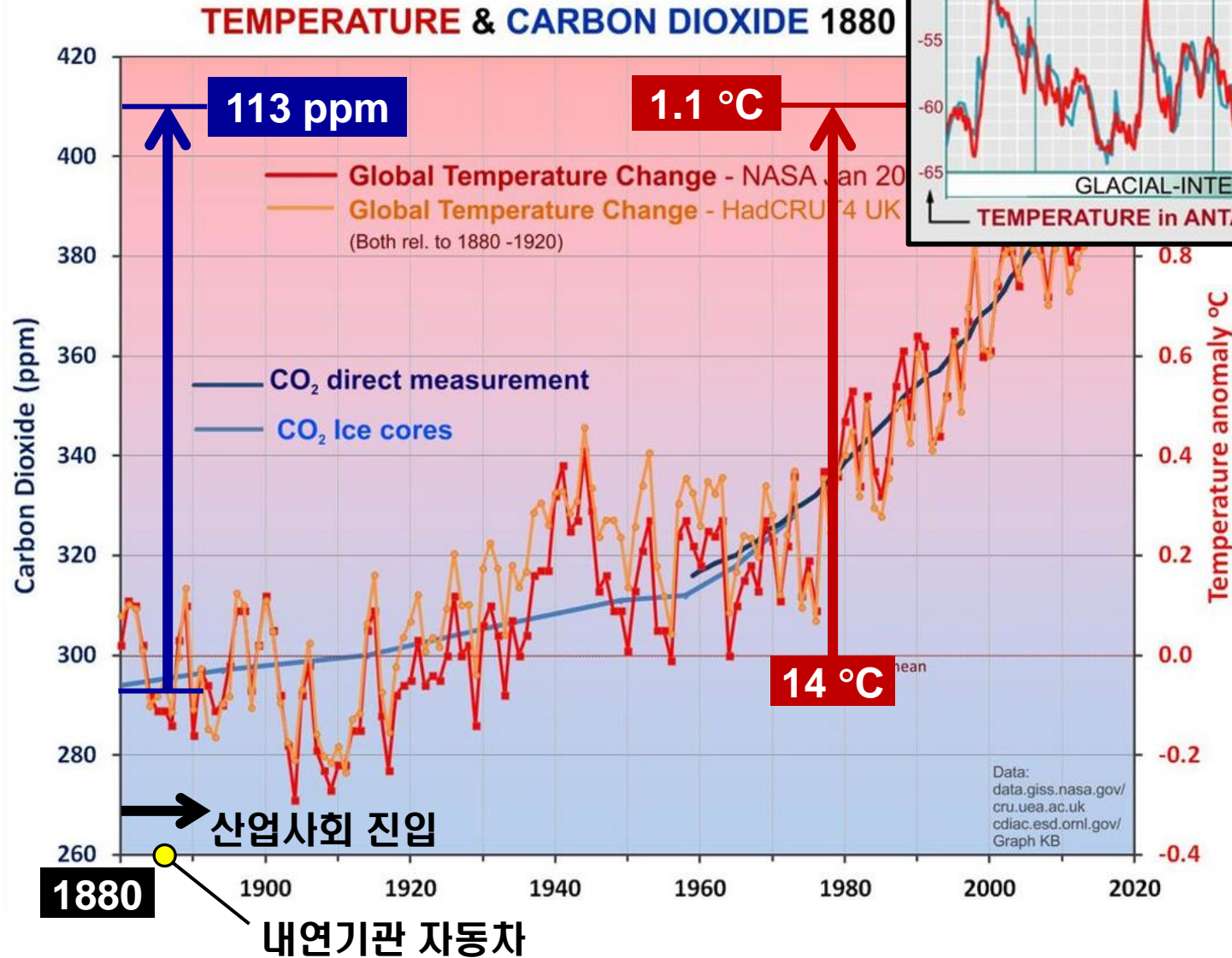
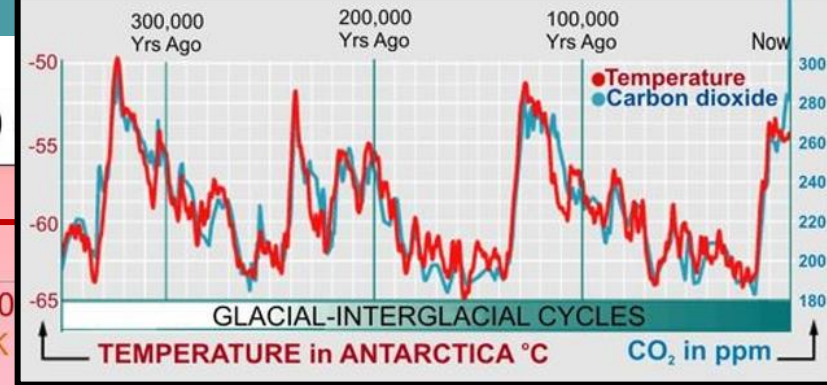
신 응수

(충북대학교 공과대학 기계공학부 교수)

기후 변화 지구 온난화

Temperatures and Carbon dioxide
In last 350,000 years

407



기후 변화 지구 온난화

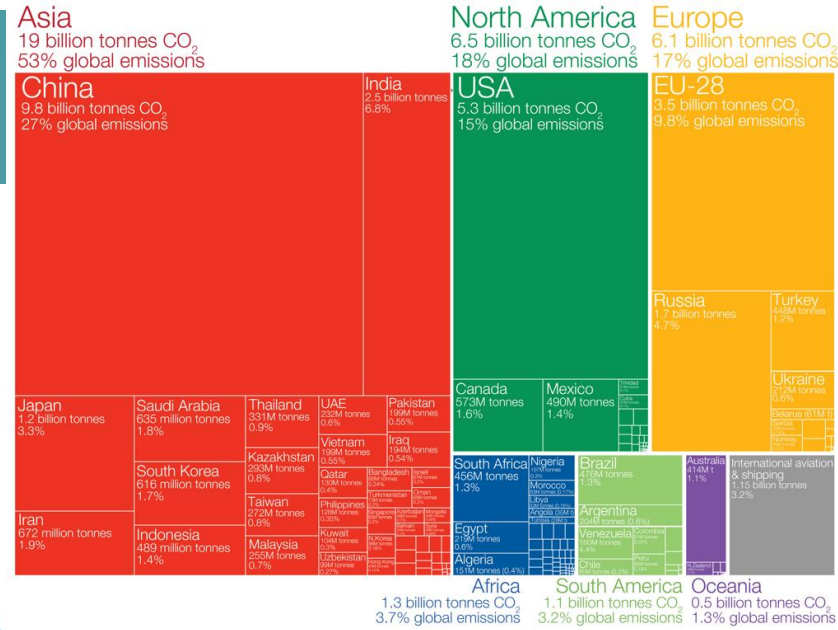
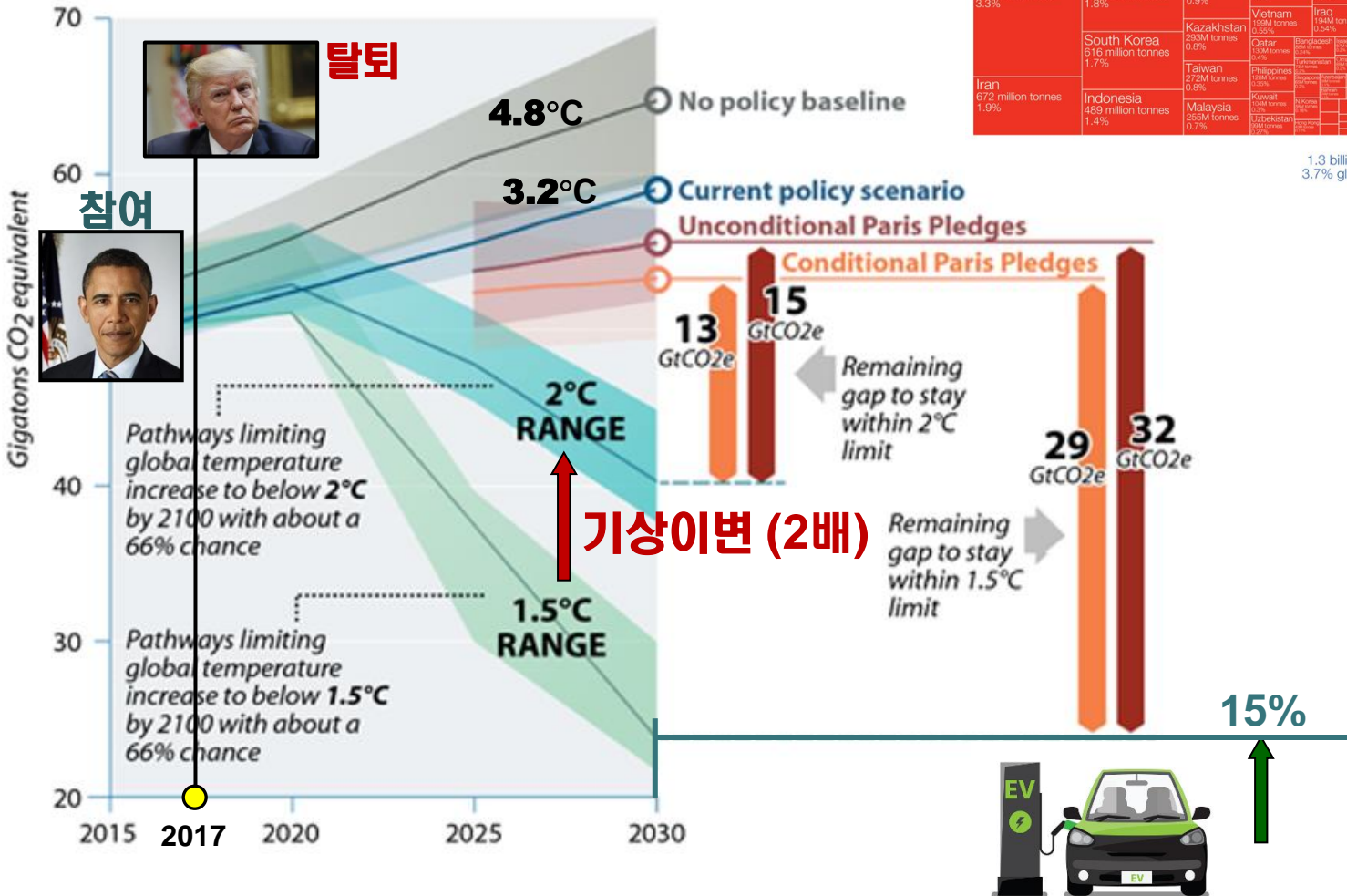


WORLD
METEOROLOGICAL
ORGANIZATION

**#COVID-19 RECOVERY IS AN OPPORTUNITY
TO GROW BACK BETTER**

기후 변화 지구 온난화

☞ 파리협정 (2015)



친환경 자동차 연비 / 배기가스 기준



친환경 법안
(2009)



- 미국 수출의 필수조건 (2016)
- **Trump orders review of CAFE.**
(Corporate Average Fuel Economy: CAFE)



"The assault on the American auto industry is over," he told a large group gathered at the plant, now being used for testing self-driving cars. He vowed to remove regulations that "undermine American auto production." Environmentalists say Trump's decision to open the review is the first step in cutting back on tougher corporate average fuel economy, or CAFE, regulations due to cover cars in the 2022 to 2025 model years.

친환경 자동차의 연비 향상 → 경량화

Lighten up!



10% (↓)

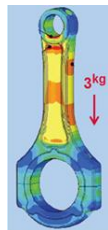
100 kg (↓)

● 연비: 5%-8% (↑)

● CO₂ 배출: 5% (↓)

재질

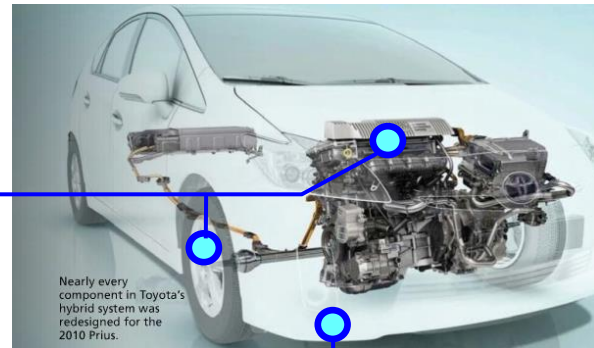
알루미늄



- 피스톤
- 실린더 헤드
- 변속기 케이스
- 엔진 블록
- 구동축
- 바퀴 프레임

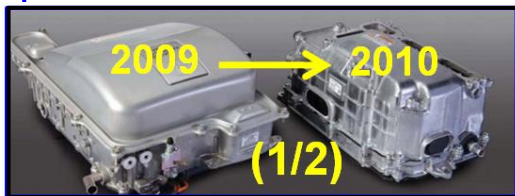
복합소재

- 후드
- 범퍼
- 밀면



소형화

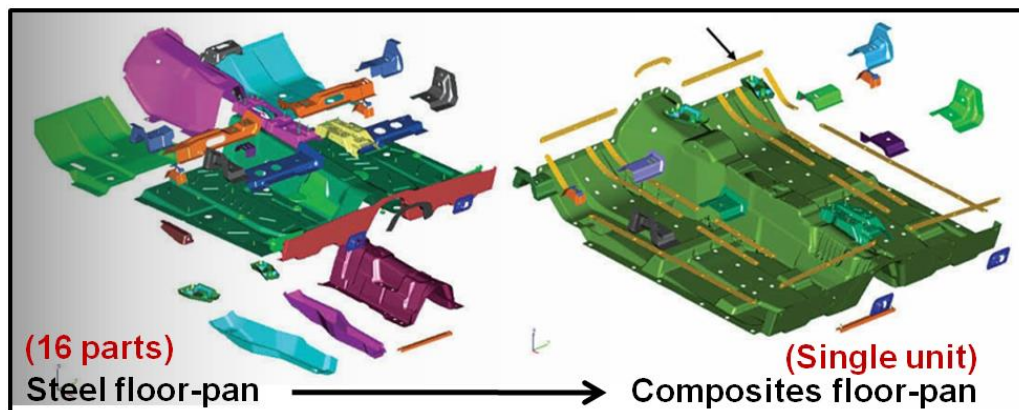
모터



엔진

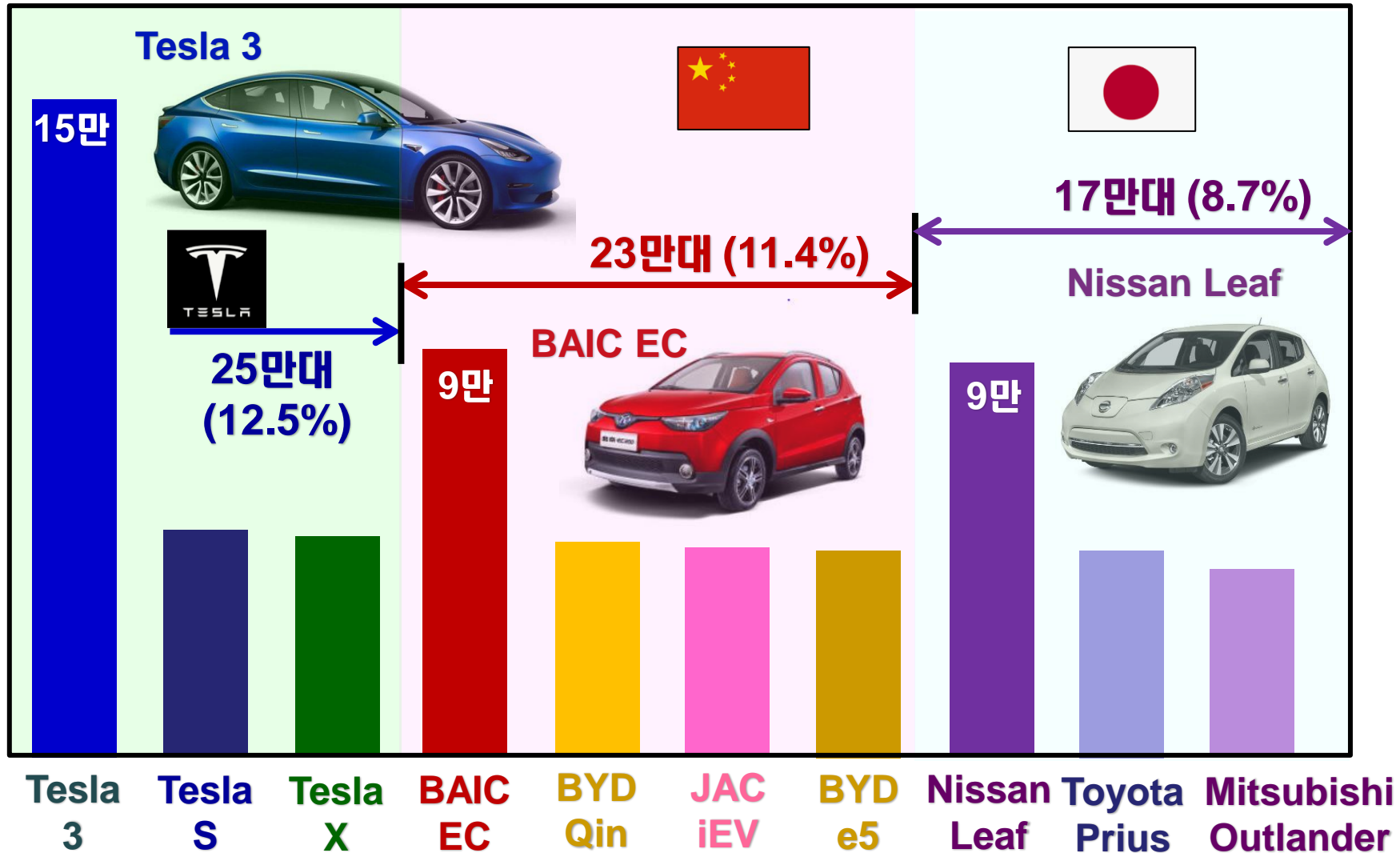


- 직접 분사
- 터보 차저

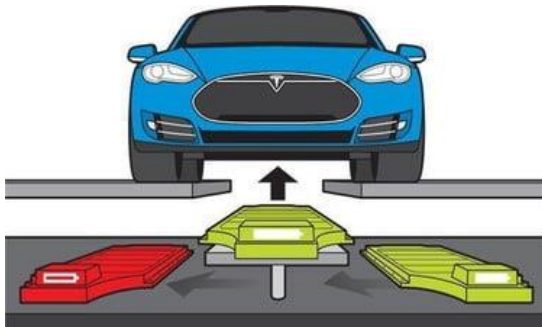
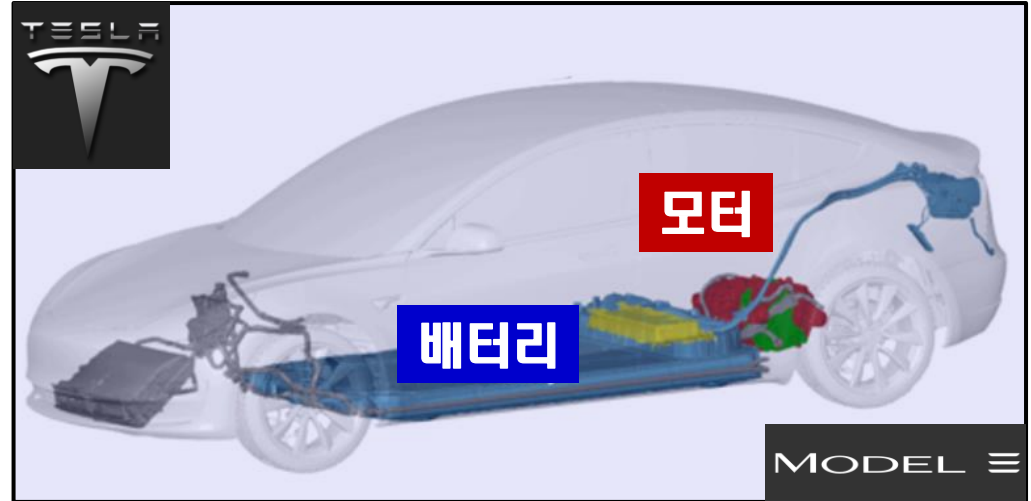


전기 자동차 판매량 (2018)

총 202만대



전기 자동차 배터리



| | | |
|------|------------------------------------|------------|
| 용량 | 75 kWh | - |
| 재질 | 리튬 이온 (Li_2CO_3) | Li 13 kg |
| 무게 | 479 kg | 차량 28% |
| 주행거리 | 523 km | 1회 충전 |
| 충전 | DC: 57 min. AC: 7.4 hour | 240V / 48A |
| 가격 | 820 만원 | 차량 15% |

수소 자동차

Fuel Cell Stack

