

Промышленное Хранение Энергии

ЧТО? ГДЕ? КОГДА?

Figure 1.2 Development Stage of Different Energy Storage Technologies

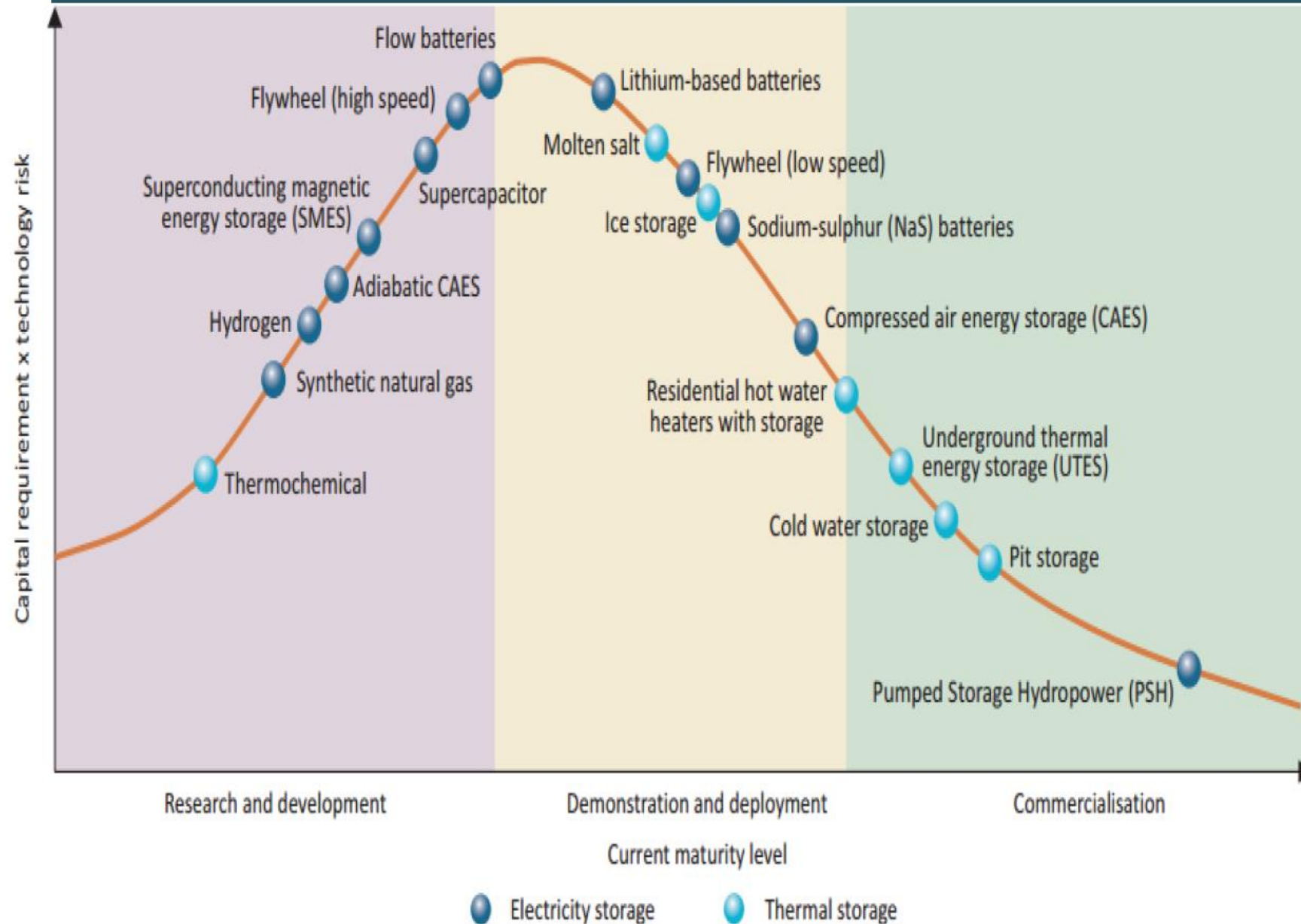
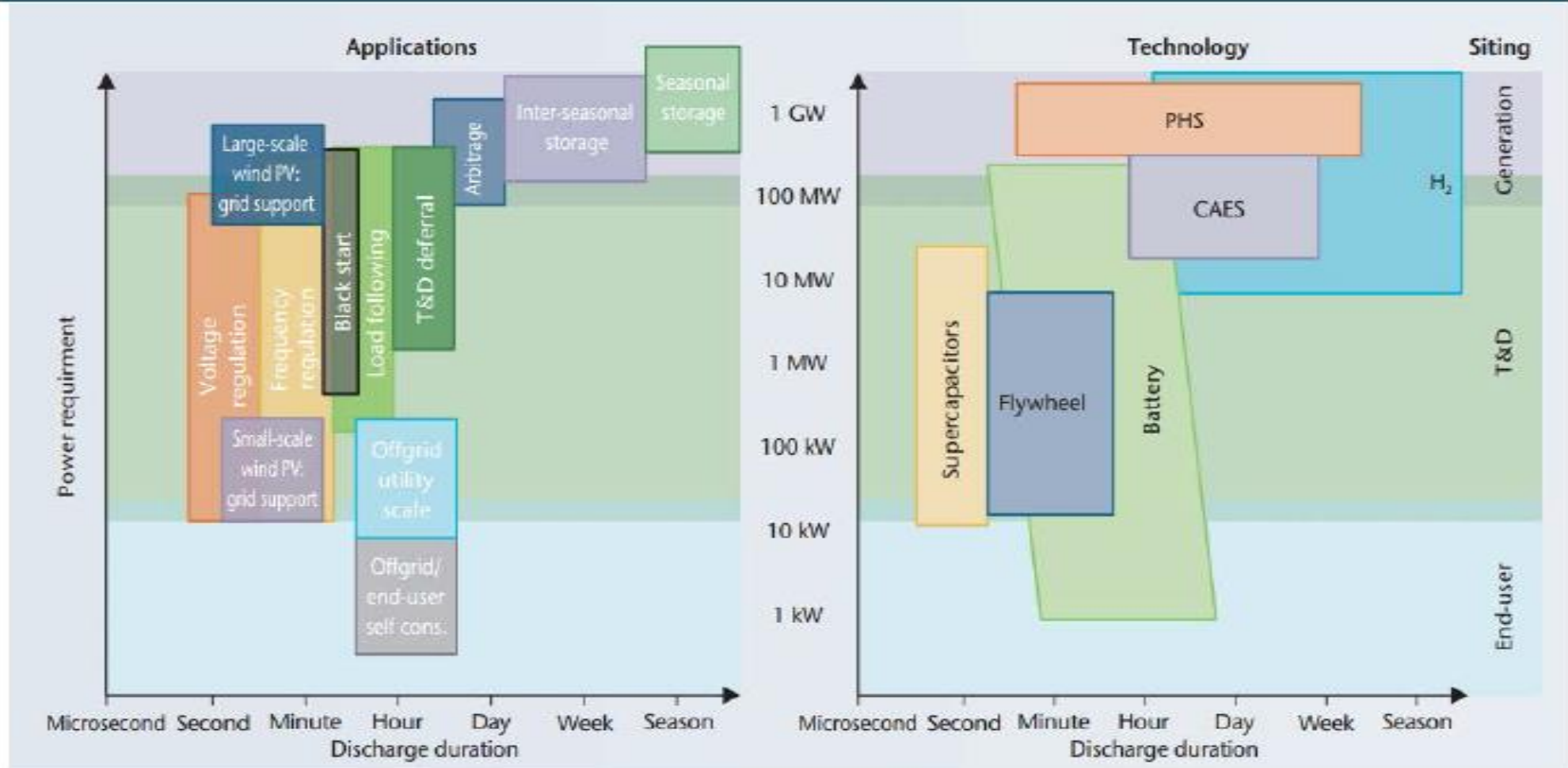
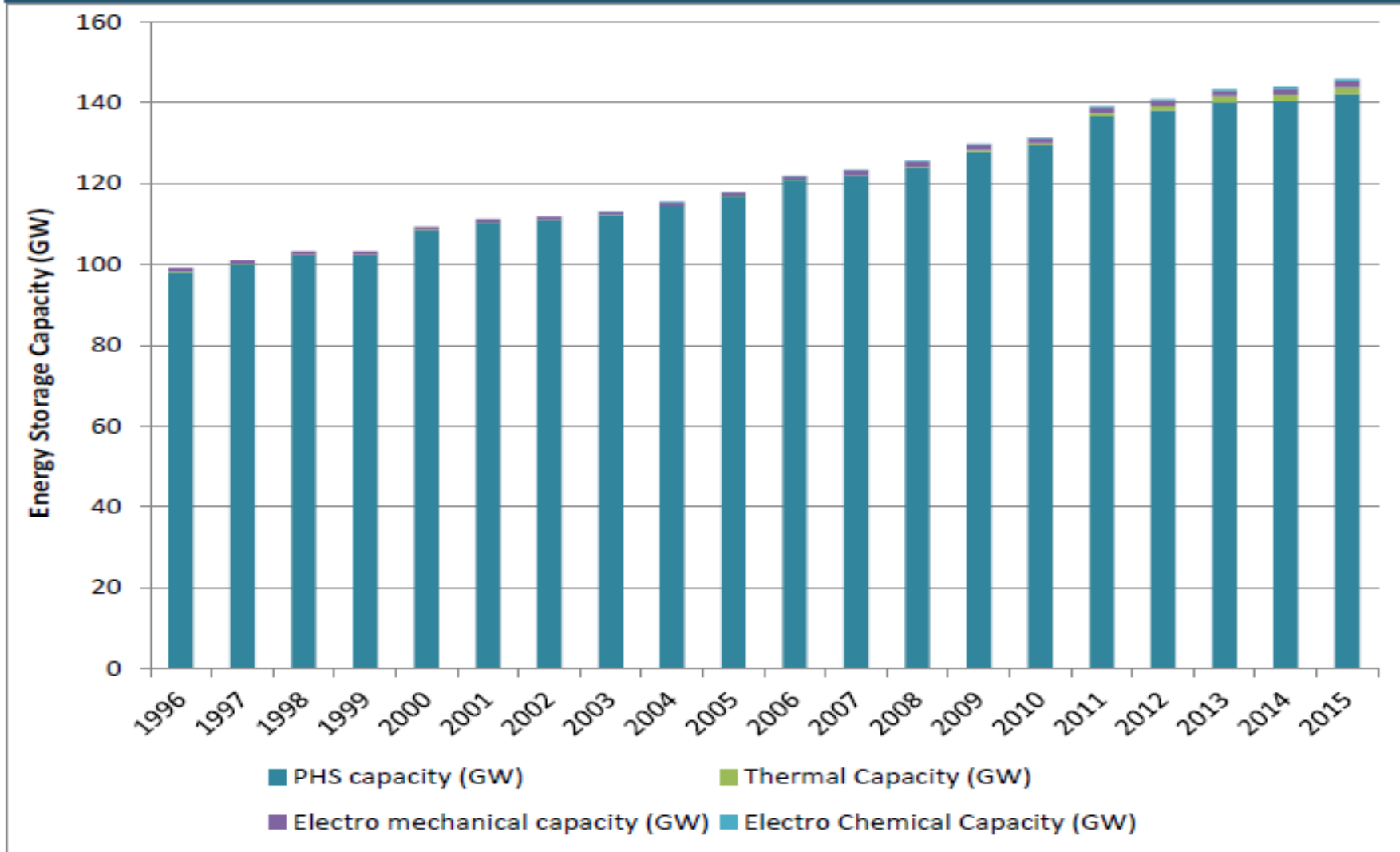


Figure 2.2 Electricity Storage Matrix: EST Characteristics and Requirements of Key Applications



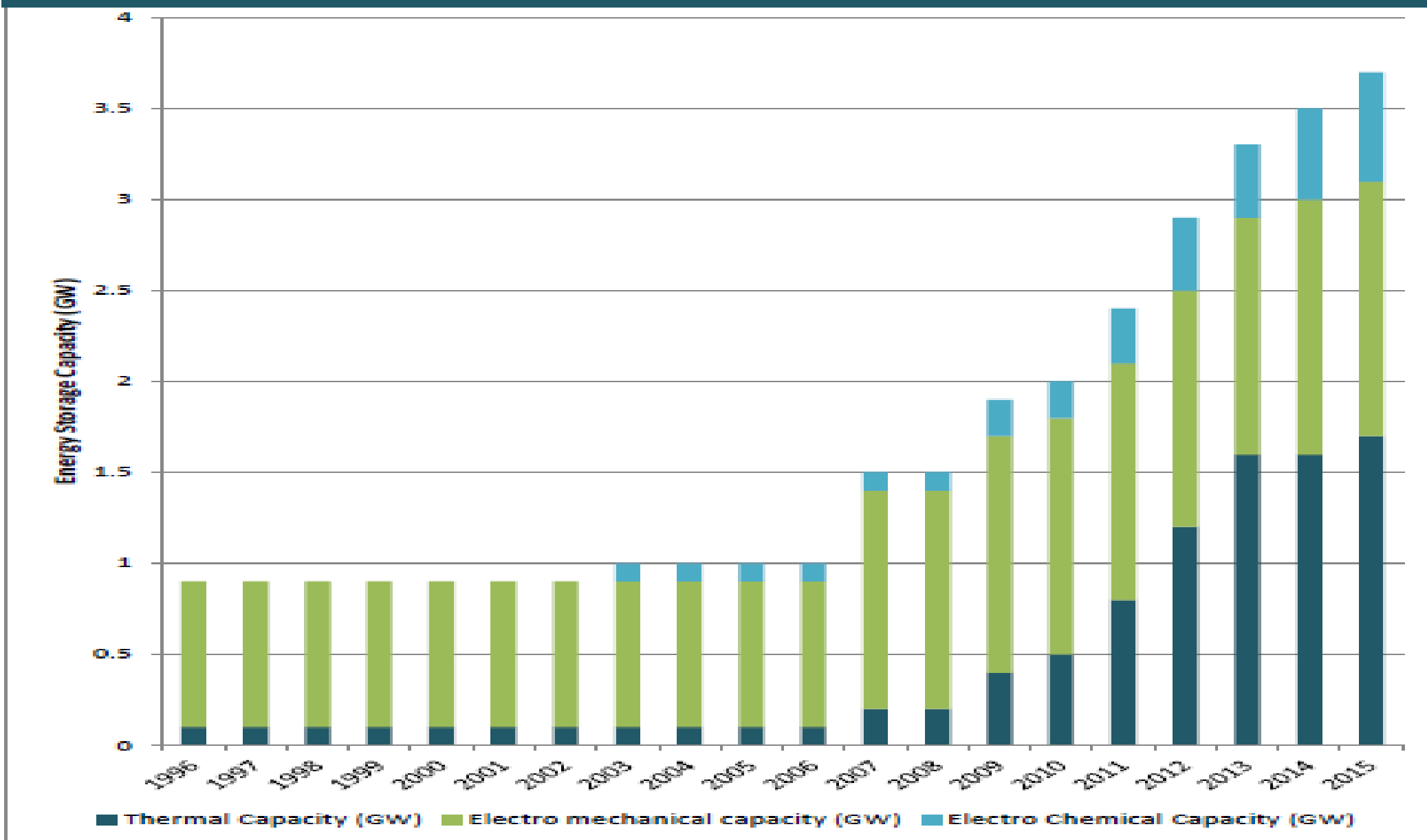
Source: IEA 2014

Figure 2.4 Global Energy Storage Capacity by EST type (GW) 1996-2015



Source: Department of Energy, Energy Storage Database 2015

Figure 2.5 Global Energy Storage Capacity by EST Type, Excluding PHS (GW), 1996-2015



Source: Department of Energy, Energy Storage Database 2015

Large numbers of end-users turning to self-production and local storage could result in load defection or even grid defection, seriously affecting the revenue models of network operators and traditional power generators. The present situation discourages potential investors because there is uncertainty with respect to the future development of energy systems and market design.

The challenge of integrating renewables increases in a non-linear fashion as penetration levels exceed 20%. Studies have found that the maximum regulation-up requirement will increase 35% from 278 MW in 2006 to 502 MW in 2012 and then increase an additional 180% to 1,444 MW in 2020. The lack of clarity regarding the ownership, asset classification, and market participation rules for energy storage is often cited as a significant impediment for storage adoption

Каково будущее систем хранения?

Технологии? Рынки? Сроки?

Как изменятся рынки электроэнергии в связи с этим?

Будет поддерживаться хранения вне-рыночными или рыночными методами

Какова потенциальная роль России?

Место хранения энергии в Российской э/э?

Место России в технологиях/экспорте?

На что ставим ставки?