IHD and app
Theory of Change

Activities	Moderating Factors	Primary Mechanisms of IHD or app usage *Blue are common to both IHDs and apps, purple are specific to apps*		Secondary Mechanisms of IHD or app behaviour change	Outcomes

Household factors
- house type and size
- number of occupants
- scope for energy savings
- household constitution (student, family etc.)
- tenancy
- energy supplier / installer
- prepayment or credit

Personal factors
- age
- socio-economic status
- relationship with energy supplier
- attitude to saving
- technological confidence and know-how
- early or late adopters
- position in the household to influence

Ongoing monitoring spurs new learning

Notifications from app make ongoing monitoring easier

Impact of change is monitored through energy feedback

Ongoing monitoring

Smart meter installation

Installer gives advice (varying quality)

Customer aware of other advice (e.g. from SEGB)

IHD is installed / app is offered

Moderating Factors

Customer understands device and instructions for use

Customer understands energy saving advice

Customer has positive experience with the installation

Customer is motivated to save money or energy

Customer searches for and downloads the app

Customer proactively uses IHD / app to check energy consumption

Household explores appliance / household energy use

Household understands the feedback provided

Initial learning period

Waste / inefficiencies are identified

Main customer discusses / shares knowledge with household

Increased sense of control over energy consumption (belief in outcomes and self-efficacy)

Intention forms to make energy savings

Household knows how to make savings

Behavioural barriers to action are overcome

Behaviour is changed

Long term behaviour change

Risk of rebound effects

Energy-saving behaviours (repeated actions that reduce energy consumption)

Energy-efficiency measures (investing to alter the material nature of the building or appliances with one-off purchases)

Information search to choose energy improvement

Household decides to adopt particular measure

Practical & financial barriers overcome, and ROI expected

Behavioural barriers to action are overcome

Energy efficiency improvements made

Optimised energy consumption

Impact of change is monitored through energy feedback

Ongoing monitoring

Notifications from app make ongoing monitoring easier

Assumptions

Information is accessible

Customer has a smartphone and is accustomed to using apps

IHD or app functions properly

IHD is visible and powered in the house

app continues to be functional and upgraded in line with phone developments

app functionality, push notifications and reminders, are selected by user

Consumers have the necessary understanding of products and technologies to make the appropriate habit change or purchase

Home is owned, or modifications are permissible

Consumers finance the changes

Frictions, hassles, procrastination, inertia, and forgetfulness act as inhibitors to attitudes translating into changed behaviour