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WORKSHOP ON DESIGNING SUSTAINABLE ENERGY SYSTEMS
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Representation of Load Variation in MESSAGE

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***These are preli*minary lecture notes, intended only for distribution to participants.**

Representation of Load Variation in MESSAGE

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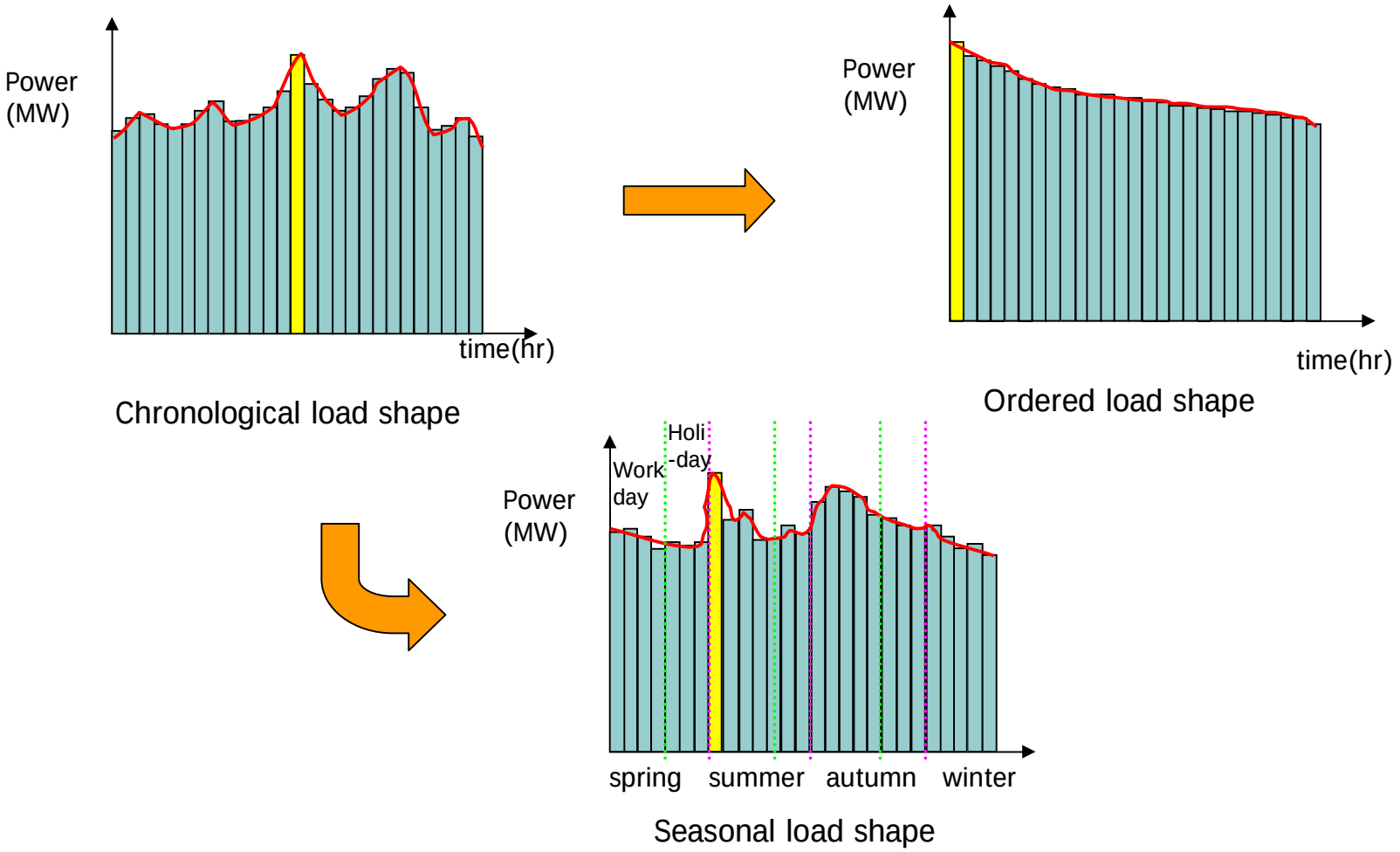
Load variation in MESSAGE

- MESSAGE generates equations & constraints at the annual basis or multi-year period basis
- Load variations in a year can also be addressed, if needed
  - Variation in electricity or heat demands
  - Supply pattern of solar power plant
- Load variation in MESSAGE: Daily, Weekly, or Seasonal variation in demands during a year
- Load Variation during a year can be represented by Load Regions and Load Curves

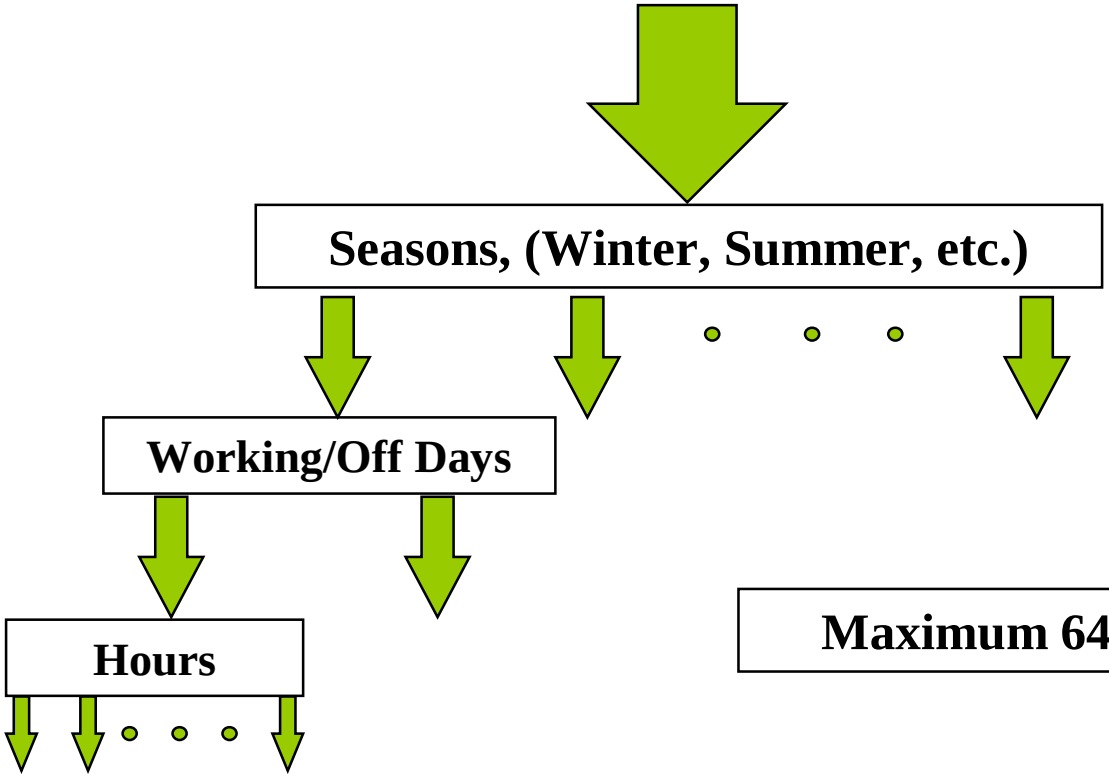
Load Regions

- Load Variation during a year can be represented by Load Regions and Load Curves
- Load regions are the time slices of a year corresponding to the various loads.
- Each Year can be divided into several Load Regions in various ways
  - Seasonal,
  - Chronological,
  - Ordered
- Number of Load Regions may vary for different years
- Only one set of load regions can be defined in a year
  - Defined Load regions for demand is to use for generating load curves of supply technologies and constraints

Various Representations of Load data



Seasonal Load Regions

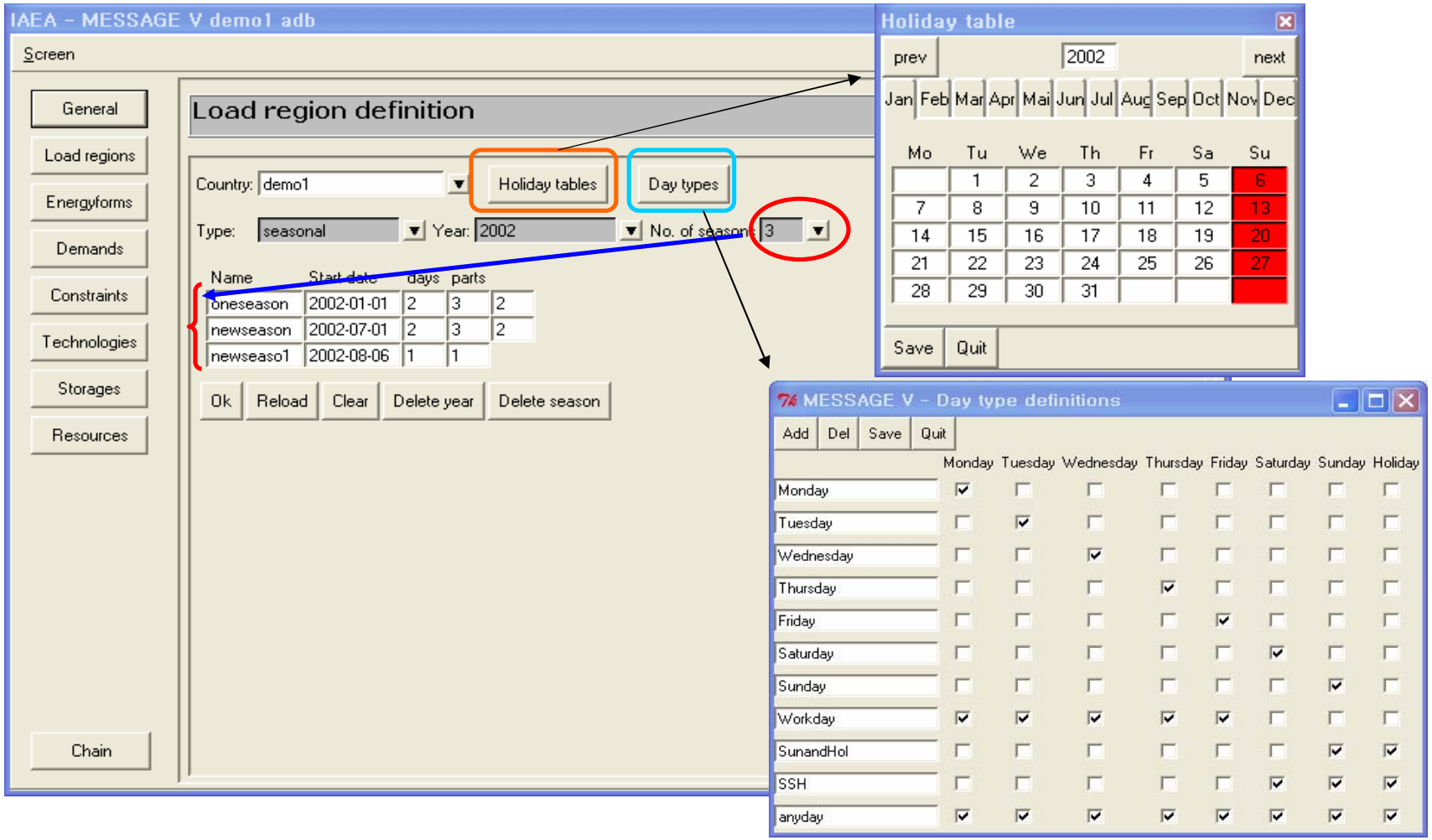


Maximum 64 divisions possible

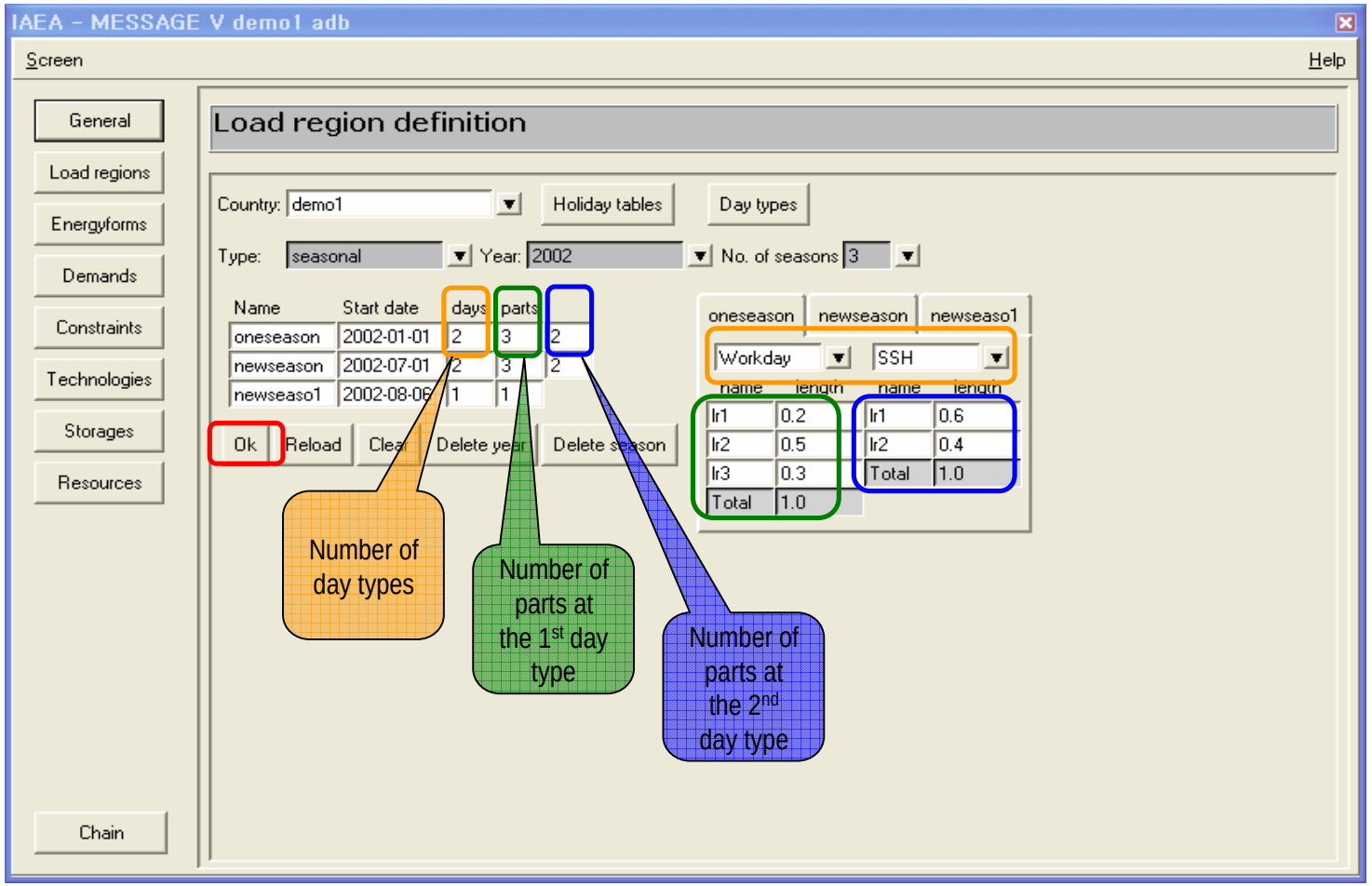
Steps for defining load curves in MESSSAGE

1. Define the load regions
2. Specify which energy form will have load region in the Energy forms screen
3. Define the demands and enter their demand data
4. Define load curves in the Demand screen

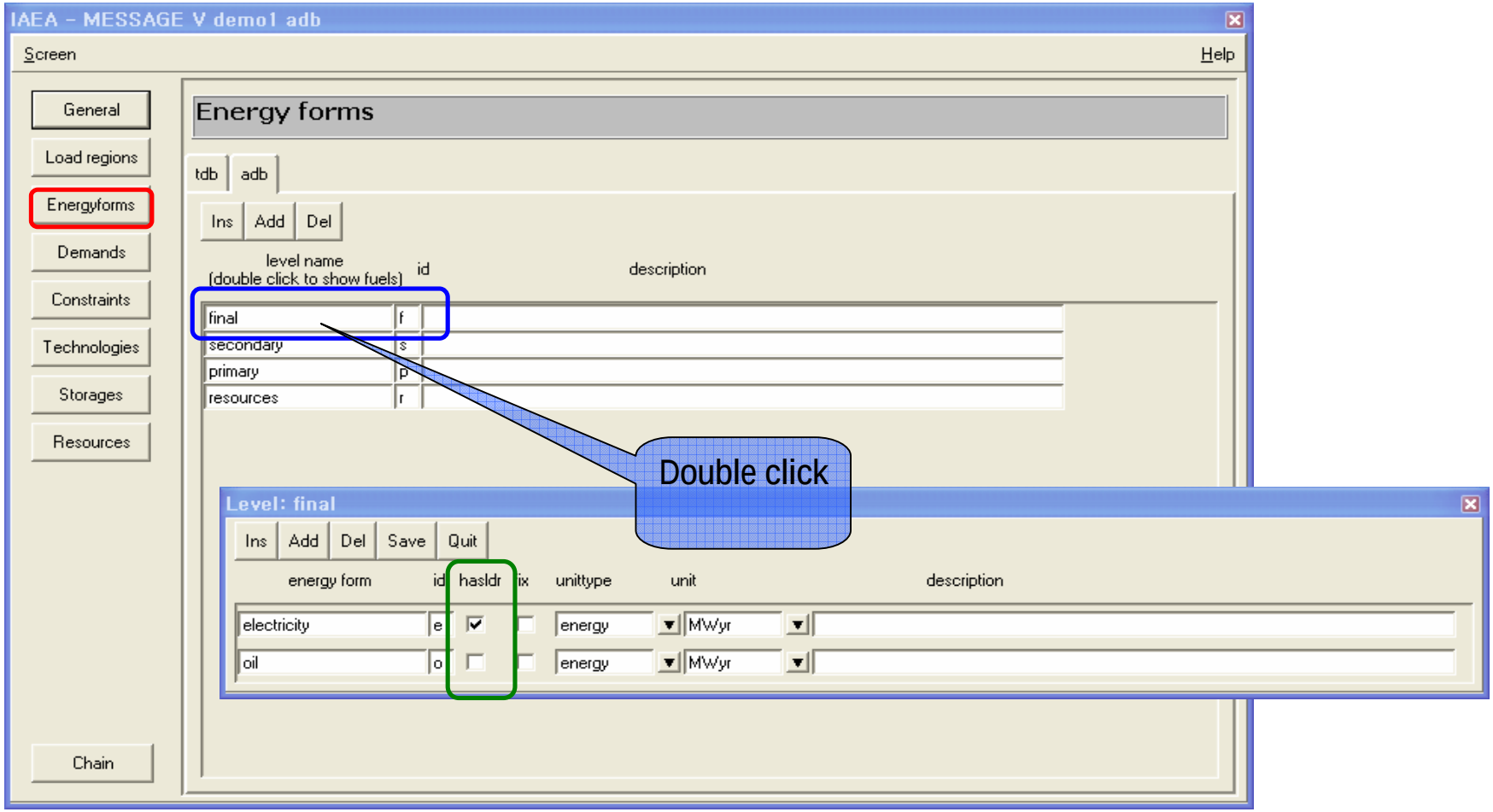
Defining load regions(1)



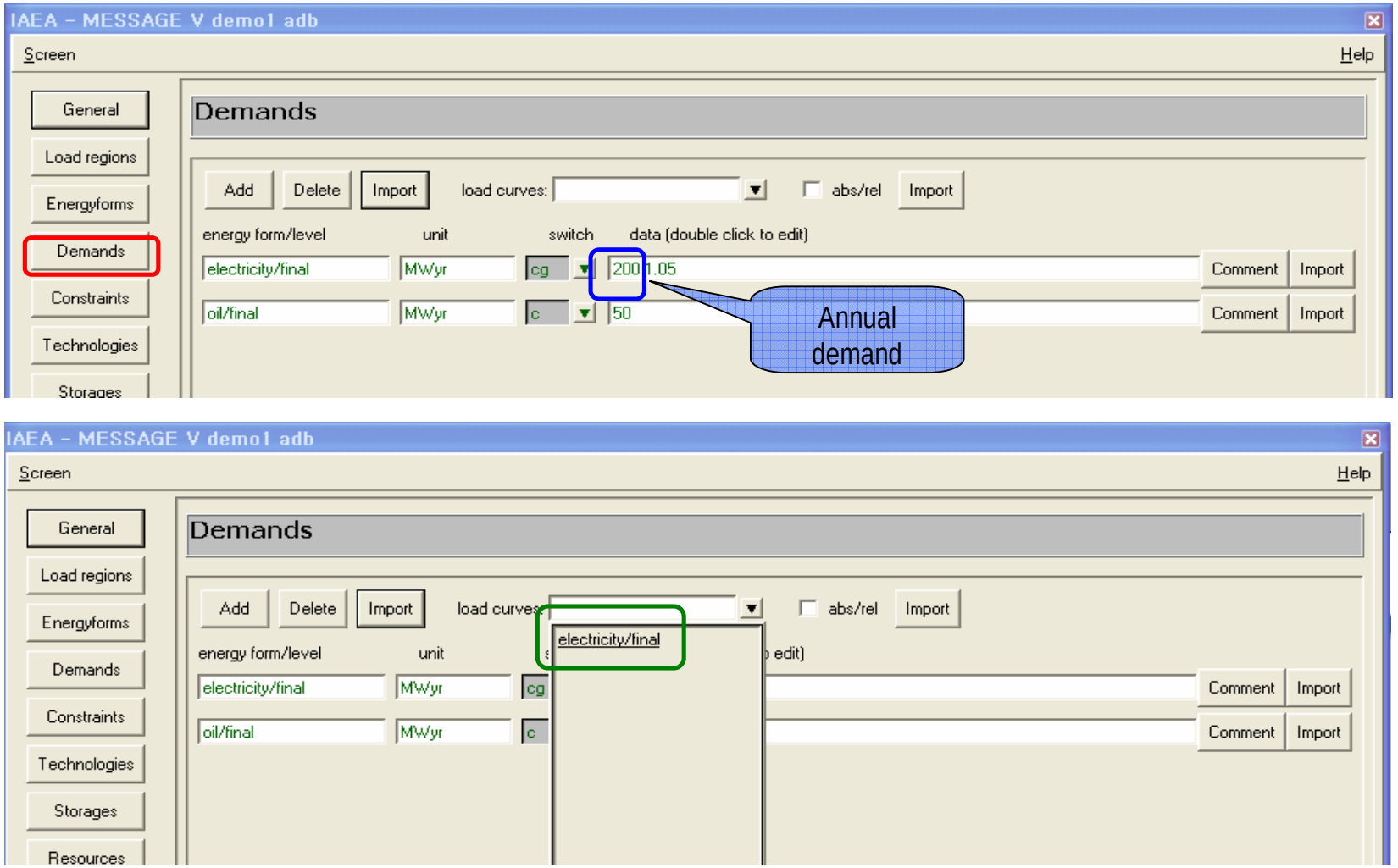
Defining load regions(2)



Link the load region to the Energy forms



Define the demands & enter demand data



Define load curves