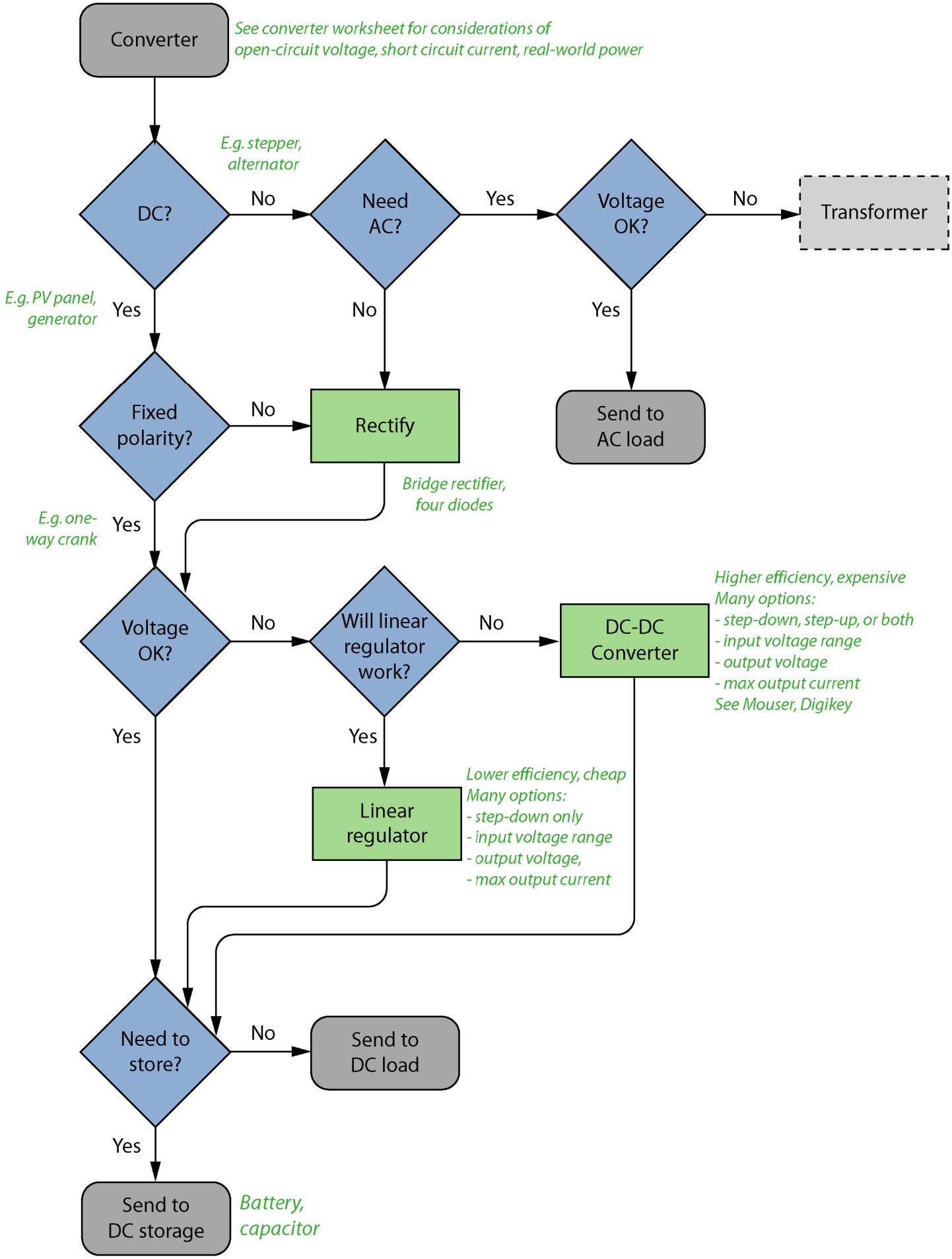
Converter
See converter worksheet for considerations of open-circuit voltage, short circuit current, real-world power
DC?
E.g. stepper, alternator
No
Need AC?
Yes
Voltage OK?
No
Transformer
E.g. PV panel, generator
Yes
No
Yes
Fixed polarity?
No
Rectify
Send to AC load
Bridge rectifier, four diodes
E.g. one-way crank
Yes
Voltage OK?
No
Will linear regulator work?
No
DC-DC Converter
Higher efficiency, expensive
Many options:
- step-down, step-up, or both
- input voltage range
- output voltage
- max output current
See Mouser, Digikey
Yes
Yes
Linear regulator
Lower efficiency, cheap
Many options:
- step-down only
- input voltage range
- output voltage,
- max output current
Need to store?
No
Send to DC load
Yes
Send to DC storage
Battery, capacitor