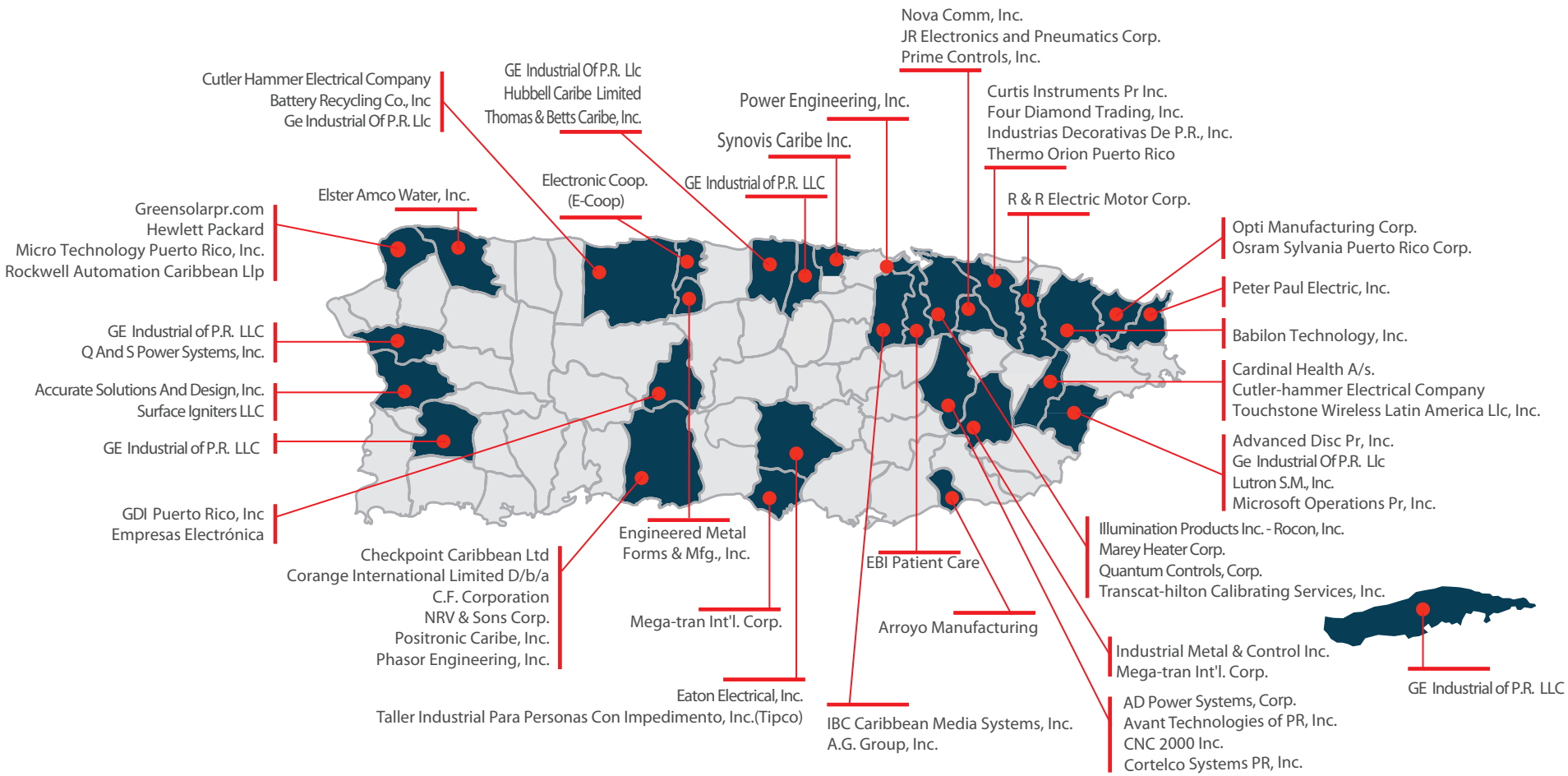ELECTRONIC AND ELECTRIC MANUFACTURING