A new global site selection study compares the cost of operating a biomanufacturing plant in a series of top U.S. and offshore hubs of the biopharma industry, including Palm Beach County, Florida. Palm Beach County ranks nationally among major U.S. bioscience centers, housing over 200 biopharma companies in the region and employing a workforce of over 7,000.

The new Boyd study found Copenhagen, Denmark, to be the most costly city in which to operate at $58.7 million per year and Bengaluru, India, to be the least costly site at $13.9 million.

Among U.S. biopharma hubs, annual costs range from a high of $55.4 million in New York, New York, to a low of $37.2 million in Raleigh/Durham, North Carolina. Palm Beach costs showed very well in the Boyd analysis at $39.2 million — second lowest among the U.S. locations.

Operating costs were scaled to a hypothetical 300,000-sq.-ft. (27,870-sq.-m.) biologics production plant employing 300 workers. The analysis includes all major geographically variable cost factors critical to the corporate site selection process for new biomanufacturing operations.

COVID-19, RESHORING AND OPERATING COSTS
Cost differentials between an acceptable production site and an optimum location can be very substantial even within a given U.S. region. Itemized annual operating costs in Palm Beach County are detailed in the table below along with several other high and low-cost biopharma hubs surveyed by Boyd.

Extended and overly risky supply chains have been a growing concern for Boyd clients in several manufacturing sectors. Today, with the COVID-19 crisis, these dangerous supply chains are no longer tolerable and indeed life-threatening as they relate to China and the biopharma industry.

The coronavirus pandemic is

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### Biomanufacturing Facility Operational Costs in Palm Beach County: The Highs & Lows

<table>
<thead>
<tr>
<th></th>
<th>Highest Cost US City</th>
<th>Lowest Cost US City</th>
<th>Highest Cost Global City</th>
<th>Lowest Cost Global City</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>New York, NY</td>
<td>Raleigh/Durham, NC</td>
<td>Copenhagen, Denmark</td>
<td>Bangalore, India</td>
</tr>
<tr>
<td>Labor Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weighted Average Annual Earnings</td>
<td>$77,369</td>
<td>$62,797</td>
<td>$90,660</td>
<td>$7,884</td>
</tr>
<tr>
<td>Annual Base Payroll Costs</td>
<td>$23,210,700</td>
<td>$18,839,100</td>
<td>$27,198,000</td>
<td>$2,365,200</td>
</tr>
<tr>
<td>Fringe Benefits</td>
<td>$5,338,461</td>
<td>$4,332,993</td>
<td>$5,167,620</td>
<td>$638,604</td>
</tr>
<tr>
<td>Total Annual Labor Costs</td>
<td>$28,549,161</td>
<td>$23,172,093</td>
<td>$32,365,620</td>
<td>$3,003,804</td>
</tr>
<tr>
<td>Electric Power Costs</td>
<td>$2,006,400</td>
<td>$1,233,600</td>
<td>$784,800</td>
<td>$828,000</td>
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<tr>
<td>Amortization Costs</td>
<td>$15,438,023</td>
<td>$14,255,811</td>
<td>$16,100,653</td>
<td>$7,645,431</td>
</tr>
<tr>
<td>Property &amp; Sales Tax Costs</td>
<td>$8,988,422</td>
<td>$5,194,943</td>
<td>$6,624,037</td>
<td>$2,374,669</td>
</tr>
<tr>
<td>Corporate Travel Costs</td>
<td>$503,389</td>
<td>$254,085</td>
<td>$309,769</td>
<td>$133,396</td>
</tr>
<tr>
<td>Total Annual Geographically Variable Operating Costs</td>
<td>$55,485,395</td>
<td>$39,278,158</td>
<td>$58,700,079</td>
<td>$13,985,300</td>
</tr>
</tbody>
</table>

Notes: Includes all major geographically variable operating costs for a 300,000-sq-ft. biomanufacturing facility employing 300 non-exempt workers.

Source: The Boyd Co., Inc., Location Consultants, Princeton, NJ
providing a new and forceful tailwind for the reshoring of manufacturing investment back to the States from China and elsewhere. Our nation’s medical devices and biopharma sector — now heavily concentrated in China — must be the first in line to disinvest there and reinvest back here in the States.

Growing pressures for price controls on prescription drugs, COVID-19 anxieties, along with tax, trade and regulatory uncertainties associated with the 2020 presidential election, are all causing a heightened focus on operating cost structures and efficiencies within the biopharma industry.

Many pharmaceutical companies and biotech companies are concluding that improving the bottom line on the cost side of the ledger will be far easier than on the revenue side in 2020 and beyond. Site selection planning on where to locate new biomanufacturing facilities, likewise, is focusing heavily on comparative economics.

**TOP U.S. & GLOBAL BIOMANUFACTURING LOCATIONS**

To the left are the top U.S. and global biomanufacturing locations surveyed by Boyd. The U.S. production sites were selected based on such criteria as the size and growth of local life sciences employment, the inventory of lab space, NIH funding, the presence of academic and medical research institutions and the depth of their overall high-tech workforce.

Off-shore locations were chosen based on their housing major operations of global biopharma players: Copenhagen (Novo Nordisk), Paris (Sanofi), Frankfurt (Merck), Dublin (Allergan), Zurich/Basel (Biogen), London (GlaxoSmithKline), Melbourne (Mayne Pharma), Bengaluru (Bal Pharma), Tel Aviv/Petah Tikva (Teva), Tokyo (Otsuka) and Singapore (Bestar).

**PALM BEACH COUNTY’S BIOPHARMA CLUSTER**

Palm Beach County houses one of the nation’s top healthcare systems, academic medical schools at Florida Atlantic University (FAU), Nova Southeastern University and University of Miami, Palm Beach. The County’s world-class anchor research institutions — Max Planck and Scripps — establish it as one of the leading neuroscience research hubs in the country.

FAU is a Carnegie Foundation for the Advancement of Teaching “High Research Activity” institution with a specific Life Sciences Initiative. Research focuses at FAU’s Charles E. Schmidt College of Medicine in Boca Raton include cardiovascular disease and stroke, cancer, Parkinson’s disease, macular degeneration, autoimmune diseases and HIV/AIDS. Palm Beach State College operates a 90,000-sq.-ft. (8,361-sq.-m.) Bioscience Technology Complex on its Palm Beach Gardens campus.

**Boyd-Surveyed Biopharma Hubs**

- **NORTHERN CALIFORNIA** (San Francisco Area Biopharma Region)
- **SOUTHERN CALIFORNIA** (LA/San Diego Biopharma Region)
- **COLORADO** (Denver Area Biopharma Region)
- **FLORIDA** (Palm Beach Area Biopharma Region)
- **ILLINOIS** (Chicago Area Biopharma Region)
- **MARYLAND** (Montgomery County Area Biopharma Region)
- **MASSACHUSETTS** (Boston Area Biopharma Region)
- **MISSOURI** (St. Louis Area Biopharma Region)
- **NEW JERSEY** (New Brunswick/Princeton Area Biopharma Region)
- **NEW YORK** (New York City Area Biopharma Region)
- **NORTH CAROLINA** (Research Triangle/Triad Area Biopharma Region)
- **EASTERN PENNSYLVANIA** (Philadelphia Area Biopharma Region)
- **WESTERN PENNSYLVANIA** (Pittsburgh Area Biopharma Region)
- **TEXAS** (Austin Area Biopharma Region)
- **WASHINGTON STATE** (Seattle Area Biopharma Region)
- **DENMARK** (Copenhagen Area Biopharma Region)
- **FRANCE** (Paris Area Biopharma Region)
- **GERMANY** (Frankfurt Area Biopharma Region)
- **IRELAND** (Dublin Area Biopharma Region)
- **SWITZERLAND** (Zurich/Basel Area Biopharma Region)
- **UK** (London Area Biopharma Region)
- **AUSTRALIA** (Melbourne Area Biopharma Region)
- **INDIA** (Bangalore Area Biopharma Region)
- **ISRAEL** (Tel Aviv/Petah Tikva Area Biopharma Region)
- **JAPAN** (Tokyo Area Biopharma Region)
- **SINGAPORE** (Singapore/JurongEast Area Biopharma Region)