Many devices we use on a daily basis have integrated batteries, meaning they are embedded in the device by design and are not removable without tools. Most rechargeable batteries are integrated. When rechargeable batteries are not integrated, there is a functional reason, such as easy exchange in the middle of a workflow for power tools, or to easily charge the battery of your e-bike.

Integrated batteries have many benefits, including:

- Size/Design
- Water Resistance
- Dust Protection
- Safety

% share of integrated batteries per product category:

- Car: 100%
- Smartwatch: 100%
- Toothbrush: 100%
- Shaver: 100%
- E-Scooter: 100%
- Notebook: 95%
- Tablet: 95%
- Smartphone: 90%
- Vacuum Cleaner: 85%
- Accessories: 20%
- Power Tools: 5%
- E-Bike: 5%

*Based on data by Avicenne Energy, 2020*
Highly innovative integrated battery technologies are on the horizon for a range of applications. These innovations allow further miniaturisation of devices and applications, and incorporation of smaller batteries.

<table>
<thead>
<tr>
<th>Integrated Batteries</th>
<th>Examples of use</th>
<th>Expected in market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bendable Batteries</td>
<td>Wearable Technology</td>
<td>2022-24</td>
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<td>Flexible Display</td>
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<table>
<thead>
<tr>
<th>Thin Film Batteries (Solid State)</th>
<th>Examples of use</th>
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<td>Pacemaker</td>
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</tbody>
</table>

Integrated batteries can be safely replaced or removed by consumers or qualified professionals, in order to allow for better collection and recycling of materials. All devices under warranty are covered by repair and after-sales solutions contributing to the creation of nearly **240,000 jobs**.

Based on data by Avicenne Energy, 2020