Convego® Beyond

Eco-innovation through payment solutions
Table of contents

Climate change: A critical challenge 05
The significance of the sustainable development goals 07
Why should issuers develop a sustainability strategy? 08
The challenges of creating a sustainable issuance strategy 10
G+D’s sustainable strategy 12
Partnerships and eco-innovation programs for issuers 14
Partnerships in action: G+D and Parley 16
Convego® Beyond 18
  Convego® Parley Ocean card 20
  The Convego® Natural card 22
  The Convego® Recycled card 24
Beyond card material 26
Focus on materials 26
Tailored, on-demand communications 26
Digital tools enable paperless customer experience 26
The card issuance process 28
G+D: Powering global payment innovation 30
Climate change: A critical challenge

The changes in our environment due to human intervention are some of the most critical challenges we will face as a species in the coming years, one that will require great efforts from every part of society to solve. The global COVID-19 crisis demonstrates that, in reaction to a threat, consumers can and will make great changes to their lifestyle in an effort to overcome the crisis. When faced with a potentially more impactful and threatening crisis, as climate change may prove to be, we believe that consumers are willing to adapt what they consume to a more sustainable footing to support the environment.

According to the United Nations, climate change is the ‘... most important global systemic threat in relation to the global economy, that required a unified response in the form of inclusive multilateralism involving all parts of society.’ Experts predict that over the next century, the ongoing climactic and environmental changes will affect every part of our lives.

In an attempt to avert the changes to our world, the UN incorporated the changes needed to protect the environment into their Sustainable Development goals – a set of 17 goals that cover every aspect of human development to ‘achieve a better and more sustainable future for all.’ Goals 13, 14 and 15 specifically focus on the climate, life on land and life in the oceans respectively. These goals are intended to unite the planet behind making real change. We believe that reducing the production of plastics and reusing that which we do produce is a key factor to success in delivering on these goals.

400m tonnes of plastic produced globally every year and rising.

2 https://climate.nasa.gov/effects/
Although banks and card issuers are not traditionally seen as heavy influencers on the climate crisis, there are significant impacts that banks can make on the environment by adopting sustainable practices. That is why, in the World Economic Forum’s 2020 Global Risks report, the top three risks identified were climate-oriented, and the report strongly requests that banks work to improve these risks. In fact, as leaders in business and with a global viewpoint, banks and card vendors are ideally placed to be leaders in the quest for environmental change.

One of the most critical ways in which human endeavor impacts the environment is our use of plastics. Globally, we produce more than nearly 400 million tonnes of plastics every year, and that figure increases every year. Conversely, we only recycle 9% of this production, meaning that the remainder is sent to landfill, burned or discarded, polluting our skies, the land and the oceans, with devastating impacts on ecosystems, food production and health.
In 2015, the United Nations identified goals in 17 key areas, called the Sustainable Development Goals, that are designed to enable worldwide improvements in quality of life, in all areas, all across the planet. Adopted by all member states, the goals “provide a shared blueprint for peace and prosperity for people and the planet, now and into the future”11. Businesses play a crucial role in supporting these goals, particularly those that relate to action on climate change and preserving life, both on land and in the oceans:

»The Sustainable Development Goals, provide a shared blueprint for peace and prosperity for people and the planet, now and into the future.«

1 https://www.nationalgeographic.org/article/vhopping-91-percent-plastic-isnt-recycled
2 https://www.marketreportsworld.com/global-polylactic-acid-pla-market-12344166
3 https://doi.org/10.1126/sciadv.aav7337
4 https://sdgs.un.org/goals
Why should we develop a sustainability strategy?

It is clear that climate change is an urgent risk to life on this planet, and that alone should encourage any organization to develop policies and procedures to minimize their impact on the environment. However, for the financial services industry, adopting a genuinely sustainable approach to their operations can also provide significant economic and market share benefits:

Digital technology and business efficiency

By replacing certain physical components of operations, such as replacing paper statements with email or app-based versions, the amount of paper and paper waste used and produced by the industry will reduce, with a net positive effect to the environment. Eliminating physical production, where possible, also simplifies supply chains, with a corresponding cost saving for the bottom line.

Consumer attitudes

The eco-conscious customer has long been considered a ‘fringe’ market, one with little impact on the bottom line. However, efforts to raise awareness of climate change and environmental issues have shifted general attitudes to sustainability and eco-friendly products, transforming the ‘eco-credentials’ of a business from a luxury to a necessity. For example, in a recent survey, more than 80% of survey participants said they felt it was ‘important or extremely important’ for companies to design environmentally conscious products.

Reputational impacts

In recent years, events have led to a significant erosion of customer trust for the banking and financial services markets. In a recent survey by Edelman, the financial services market was reported as the least trusted by survey respondents. However, it is estimated that 92% of customers will be more likely to trust a company that supports social or environmental issues, meaning that investing in environmentally friendly products and services will have a genuine positive impact on a financial service business’ reputation.
Customer acquisition and loyalty

In a recent CGS survey, 25% of respondents indicated they would pay more for sustainable products, which in the current economic climate is a significant indicator of the priority that customers are placing on eco-conscious products and services. In fact, 72% of shoppers say that they were ‘actively buying more environmentally friendly products’, an attitude that will also inform their selection of financial services providers.

Innovation and differentiation: The ‘Gen-Z’ market

Gen-z, commonly defined as those born on or after around 1995, are considered one of the most influential markets on the planet. Widely perceived as early adopters by analysts and strategists, Gen-z made up 32% of the world’s population in 2019. This eagerness to embrace new technologies make this demographic a useful indicator of wider social and market trends, as well as being a valuable market audience in their own right. Where Gen-z goes, the rest of your market should eventually follow.

However, the values and responses of this generation are different from millennials and older segments of the market. For Gen-z, innovation remains an important factor in differentiation, but as ‘digital natives’ they see technology as a commodity.

How gen-z perceive differentiation is through purpose. A recent study by Porter Novelli revealed that 90% of Gen-z ‘believe companies must act to help social and environmental issues’ and 75% will ‘do research to see if a company is being honest when it takes a stand on issues’.

Fintechs are leveraging their expertise in user experience, and tech giants are basing their strength on customer data and personalized experiences. This explains the strong interest of traditional retail banks in positioning themselves as eco-conscious and responsible card issuers.

18  https://www.conecomm.com/research-blog/cone-gen-z-purpose-study
The challenges of creating a sustainable issuance strategy

It is clear that the market demands sustainable products and services, but the actual implementation can be complex. As well as requiring significant overhauls to production and logistics processes, sustainable claims are subject to intense consumer scrutiny, especially by younger generations of customers, so any changes need to be open, genuine and transparent.

Here are some of the more significant challenges involved in moving card issuance to a more sustainable footing:

**Cost**

The reason why most cards are made from polyvinyl chloride (PVC) is that it is a perfect combination of durability and cost-effectiveness. Changing the material that the card is produced from could increase the cost per unit of the cards.

**Expertise**

Material science is a complicated subject, requiring significant knowledge and expertise to help select correct materials and understand how to adapt existing production processes to new card materials. Acquiring this knowledge in-house may be difficult for many card issuers to undertake.

**Time to market**

Developing a sustainability strategy for issuers can take time, especially for larger multi-national issuers, whose production, logistics and business processes are especially complex. This complexity can mean a delay in new products reaching the market, and so issuers risk more agile competitors such as Fintech startups and other consumer players deploying more rapidly, stealing share of market with first mover advantage.
Sourcing

Innovative new materials, recycling approaches and production techniques are being developed all around the world in an effort to reduce our reliance on polluting plastics – this is a fast-moving sector. The challenge comes for issuers in finding the right vendor for these new approaches, particularly when these innovations come from untried and untested businesses. It can be hard for issuers to know who to trust in this crowded and rapidly evolving market. Although the benefits of adopting a sustainable issuance strategy are significant, so too are the challenges faced by issuers in the creation of such a strategy. Growing and maintaining the right partnerships, drawing on their capabilities and expertise, can be the most efficient way to quickly and cost-effectively meet the challenges of transforming an issuance process into a sustainable approach.
G+D’s sustainability strategy

For G+D, caring for the environment is not a new phenomenon. For us, it’s important and we act. It’s a journey. We take our responsibility for the environment extremely seriously, and we work hard to preserve the world for future generations.

At the end of 2018, we introduced a Group-wide climate goal. Our aim is to reduce emissions by 2022 to a level compatible with the two-degree limit set out in the Paris Agreement. This means cutting our direct and indirect emissions (tCO₂) by 25 percent. To achieve this goal, we are transitioning to renewables (some produced in-house) and implementing a range of energy-efficiency measures.

Our 20 major production sites already have an ISO 14001 environmental management system in place. In addition, selected energy-intensive locations are certified to ISO 50001. We are also reducing our environmental footprint through various measures in the areas of waste prevention and recycling, mobility, and the use of chemicals.

Accredited

ISO 14001
certified on all 20 major production sites

ISO 50001
certified on selected locations
In our manufacturing operations, we partner with customers to find more sustainable solutions while also investing in R&D. For example, G+D is working with central banks and banknote printers to further increase sustainability throughout the value chain, producing payment cards made from renewable materials and creating embedded SIMs that eliminate the need for card bodies.

Beyond our own commitments to cut our direct and indirect emissions (tCO₂) by 25 percent, we see it as our responsibility to help our customers achieve their own sustainability objectives. Our portfolio of sustainable issuance solutions, combined with our growing network of sustainability partners and our own vision for a more sustainable future all combine to create our eco journey - building an eco-friendly future, every payment of the way.

»G+D wants to reduce our absolute greenhouse gas emissions by 42 percent by 2030 and reach net zero by 2040. 85 percent of electricity purchased across the Group will come from renewable sources by 2030. G+D aims to reduce water consumption by 10 percent by 2030 (compared with 2020). Looking ahead, we intend to adapt our portfolio to make an even greater contribution to sustainable economic development. In 2019, we therefore mapped the ways our products and solutions support and promote the United Nation’s Sustainable Development Goals (SDGs).«

Ralf Wintergerst, Group CEO Giesecke+Devrient
Partnerships and eco-innovation programs for issuers

Creating partnerships with the right industry figures can help issuers deploy sustainable programs quickly, efficiently and effectively, leveraging their specialisms to overcome the challenges inherent in implementing an eco-conscious issuance and production strategy.

Partnerships can help issuers in four critical ways:

Expertise
Leveraging the expertise of partners, from material selection to manufacturing and logistics can help overcome the challenges of creating a sustainable issuance program. A trusted partner will already have considered and calculated the optimum methods for deploying sustainable solutions and will have the depth of knowledge and experience needed to adapt these solutions to any card issuers’ specific circumstances.

Specialist facilities and services
Beyond just knowledge, the right partner may already have created the facilities and services that are required to deliver a sustainable issuance program. For example, a partner may already have retooled their production process to manufacture or personalize cards made of sustainable materials, so outsourcing production and personalization to them eliminates the need to retool internal production facilities, saving time and money.

Reputational impacts
Partnering with the right organization, one that already has a significant reputation for sustainable innovation can quickly help to improve the issuer’s brand perception. Today’s consumers are savvy – investigating partnerships and relationships to understand the truth behind any eco-friendly claim, so choosing a partner with impeccable ‘eco-credentials’ can go a long way towards alleviating concerned consumer’s trust issues.
The eco-innovation service ecosystem

As specialist providers, partners are usually more significantly embedded in the wider sustainability ecosystem, with contacts and partnerships spanning across multiple market and service sectors. This can be an advantage for issuers who want to adopt a wider eco-innovation strategy across their entire business, using their existing partnerships in card issuance to access specialist partners in other areas. For example, a manufacturer of card materials may have a relationship with a sustainable point of sale (POS) manufacturer.

G+D, as a world leader in payment technologies, can help their partners to access this specialist advice and expertise, as well as leveraging their growing range of relationships within the eco-innovation service ecosystem, acting as a bridge to this wider market and enabling rapid transformation to a sustainable model for any card issuer.
Partnerships in action: G+D and Parley

G+D, a world leader in payment technologies, has partnered with Parley, a movement committed to taking action to ‘raise awareness for the beauty and fragility of our oceans and collaborate on projects that can end their destruction’\(^\text{20}\).

The Parley AIR Strategy for ending marine plastic pollution

**A**void
Avoid plastic wherever possible and replace with alternative, eco-innovative materials.

**I**ntercept
Intercept plastic waste before it ends up in landfill, gets burned, buried or tossed into rivers or oceans, and support local recycling and composting initiatives.

**R**edesign
Redesign materials, methods, and products to be more in sync with nature.

\(^{20}\) [https://www.parley.tv/#fortheoceans](https://www.parley.tv/#fortheoceans)
This is an approach that G+D wholeheartedly support, and we are working with Parley to explore and implement concrete card issuance solutions that deliver on this approach.

We are just at the beginning of our journey with Parley and we expect our relationship to deepen over time, inviting our clients to work with us, and with Parley to collaborate on solutions that reduce the impact that plastic has on ocean, coastal and marine environments.

Did you know...«Parley, a movement committed to taking action to ‘raise awareness for the beauty and fragility of our oceans and collaborate on projects that can end their destruction’.»
As part of our commitment to move towards a more sustainable way of doing business, we offer a range of solutions across the entire card issuance lifecycle, from sustainable card materials and packaging and carrier solutions to digital alternatives that eliminate polluting aspects of the issuance process. We know that there is not a ‘one size fits all’ approach to sustainable issuance, which is why our offerings meet a range of different needs and markets, so issuers can tailor their approach to their own sustainable goals and market requirements – we call them Convego® Beyond.

Our Convego® Beyond program consolidates our entire eco-innovation portfolio and reflects our ambition to go beyond just eco-friendly card materials by looking for opportunities to provide our customers, and their card-users, more sustainable solutions throughout the lifecycle of their relationship with their financial institution.

We look to provide a complete eco journey for our clients’ end customers, relying on our expertise in product selection and our range of industry partnerships to provide a ‘cradle to grave’ offering; innovative products that address end customer needs, produced in the most ‘green’ ways possible, and delivered to the end customers’ doorsteps in the most eco-conscious way.

Whether it’s production, fulfillment or end of life, our efforts to become more eco-friendly are a journey and a collaborative enterprise which bring us towards more partnerships with environmental organizations who share our socially responsible values and our courage to go beyond.

Eco materials
In card issuance, any discussion of sustainability will likely begin with a discussion of the materials used to manufacture payment cards. Traditional cards are made from PVC, which can be recycled but is often sent to landfill, burned or discarded, adding to the impacts that plastic waste has on our environment. Adopting sustainable card materials, either across an entire card issuance program or as a specific eco-conscious product, is concrete, demonstrable proof of an issuer’s commitment to sustainability and the environment and helps them to stay top-of-wallet.

Our eco materials program offers a range of different sustainable materials for production, each with a different purpose, as well as access to partnerships with sustainability and environmental NGOs to deepen the issuers’ sustainability message and marketing and communications support to help deliver that message to the end user.

We currently offer three sustainable cards to issuers, each with their own eco-conscious story. This allows issuers to select the material that most resonates with their sustainability strategy and Corporate Social Responsibility (CSR) messages. Therefore building a coherent sustainability brand to target their sensitive eco-conscious demographics.
Convego® Parley Ocean is a lifestyle card made of plastic collected from the oceans and coastal regions by our environmental partner Parley for the Oceans. Beyond being a payment card, Convego® Parley Ocean is putting the power for change in the hands of the consumer, and is a daily reminder of our commitment to save the oceans.

Beyond sending out a call to action to card users, the Convego® Parley Ocean card program is also an invitation for issuers to join G+D and Parley to participate in local conservation, community development and education efforts by engaging in activities that benefit the local communities and environment in which they operate.

**Turning plastic waste into symbols of change**
Convego® Parley Ocean card

Recycled
The ocean plastic card body is made of 100% recycled layers and each layer made of minimum 80% recycled content. The ocean plastic content in the card is minimum 75% which is intercepted from the coastal environments.

Mono-material layers are easier to recycle than composite card bodies.

Approved
Already used for other industries e.g. retail and apparel.

Demand
VISA and Mastercard certified.

Personalization
Thermo printing, indent and embossing.

In summary

»Convego® Parley Ocean card is a 'top-of-wallet' payment card and a way for issuers to actionably demonstrate their solidarity with their most eco-conscious end customers.«

2048
Overall accepted deadline for the collapse of all commercial fisheries.

2050
Ocean plastic will outweigh all of the ocean’s fish.
The Convego® Natural card

Protecting the natural world and its resources for future generations underlies any sustainable strategy. Avoiding the use of fossil-fuel derived plastics which deplete resources and contribute to waste is critical to success. The revolutionary Convego® Natural card is made from polylactic acid (PLA) – a compostable bio-plastic manufactured from renewable plant sources that is completely petroleum-free.

As a ‘top-of-wallet’ card, the Convego Natural® card is designed to appeal to purpose-driven, eco-sensitive end users that want to see eco-innovation and a completely new approach to the fight against plastic usage.

The Convego® Natural card is the first card body on the market made from 100% PLA layers. With this card, G+D is taking an innovative step towards unlocking the potential of bioplastics for payments card industry.

These cards are manufactured completely from annually renewable sources, offering a reduced carbon footprint, as much as 70% when compared to many traditional plastics. Convego® Natural cards provide the same durability as standard plastic cards, but with outstanding additional environmental benefits: It uses 65% less energy to produce as compared to traditional plastics, It emits 68% fewer Greenhouse Gases (GHGs) and if incinerated, it doesn’t emit toxic fumes unlike its petroleum-based counterparts.

»Placing a Convego® Natural card in your end customers’ wallet provides them with a feel-good, hopeful factor for the future and reinforces your social responsibility credentials.«
**PLA card construction**

The card body is made of 100% PLA layers because mono-material layers are easier to recycle than composite card bodies.

**Compostable**
Material derived from renewable biomass (no petroleum).

**Reliable**
Material is used in medical implants, packaging and consumer goods.

**Non toxic**
PLA is compostable and produces no toxins when destroyed during incineration.

**Approved**
Visa and MasterCard approved (DI and Contact).

**Personalization**
Thermo printing, indent and embossing.

*Compostable under industrial conditions

---

**In summary**

- **Up to 70% Carbon footprint reduction**
  PLA when compared to many petroleum-based plastics\(^{21}\).

- **65% Energy production reduction**
  PLA when compared to many petroleum-based plastics.

- **68% Greenhouse gas reduction**
  PLA when compared to petroleum-based counterparts.

The Convego® Recycled card

Today’s urban life is heavily impacted by plastics use. Reducing virgin plastic use through recycling alleviates waste sent to landfill or discarded, making our cities greener and more pleasant places to live. The Convego® Recycled card repurposes discarded PVC to make a new card and helps to alleviate this plastic burden. It sets a new and higher sustainability standard for payment cards.

Recycled cards have been around for a while, but most providers only offer cards that are composed of 85% recycled material. Our Convego® Recycled card is the first card body on the market made from 100% recycled PVC and is designed to appeal to end-users who focus on the sustainability and reusability aspect of the climate change message.

Convego® Recycled is setting a new and higher sustainability standard in the payment card industry. Its body is made of 100% recycled PVC, making it easier to be recycled and enabling card issuers to reach their Carbon Neutral corporate objectives. For an issuer’s existing end customers, the Convego® Recycled card should have particular resonance as their payment cards move towards expiry and replacement.

»We need to rethink the current industry use of environmentally disastrous virgin PVC to manufacture payment cards. If we are to set a new standard, using 100% rPVC should be a critical factor in our approach.«
rPVC card construction

Recycled
The card body is made of 100% rPVC layers because mono-material layers are easier to recycle than composite card bodies.

Sourced from different industries such as packaging, printing, windows or automotive production.

Approved
Already used for other industries e.g. retail and apparel.

Reduce, Reuse and Recycle
To ensure that waste generation and management is as sustainable as possible.

Demand
VISA and Mastercard certified.

Personalization
Thermo printing, indent and embossing.

In summary

100% Recycled PVC

Every plastic part of the Convego® Recycled card is made from 100% recycled PVC.

90% Maximum energy reduction

The energy requirements to manufacture recycled PVC items are between 45% and 90% less than manufacture from virgin PVC materials22.

200% CO₂ savings for every tonne of PVC recycled, two tonnes of CO₂ are saved23.

Beyond card material

We will work with you, based on your needs and our core design principles, to build a sustainable path to a more paperless issuance process:

Focus on materials

We start with a focus on materials, and the aim to reduce usage across packaging, welcome letters and collateral. Deliver your best first impression with packaging that conveys authentic messages to your cardholders using materials sourced in line with our sustainable values. G+D’s work with packaging suppliers that offer Carbon offsetted paper, and that are also FSC accredited. In addition we are working on a range of solutions for the environmentally conscious.

Our range of materials is carefully chosen to be the best possible solution for our clients’ needs. We aim for sustainably sourced and processed materials, and for using the minimum amount of materials to get the job done.

Tailored, on-demand communications

Traditional approaches to printing carriers, inserts or other materials is that a large stock is pre-printed in bulk, which then is personalized if required and shipped to customers. This can lead to waste and inefficiencies that may have an environmental impact. G+D offers its clients an end-to-end fully print on demand service, that only prints the exact amount of needed materials, fully personalized and ready to send to end users. These solutions supports sustainable innovation in several ways.

Tailored, just-in-time communications reduce waste, not only that arising from pre-print, storage and transport, but also the waste that comes from sending your customers untargeted materials that may quickly become obsolete.

Digital tools enable paperless customer experience

Where possible, the use of digital tools to replace physical processes helps to eliminate paper and plastic usage and waste. One example of this tool is our ePIN service, where, instead of receiving a separate PIN mailer, the end customer uses mobile App or SMS to receive their PIN in a paperless way. This method is faster, more secure and completely paperless. Additionally, integrating QR codes and Augmented Reality (AR) solutions in carrier mailings removes the need for additional printed sales and marketing collateral, as the content is served digitally.
»Reduce waste by replacing printed collateral with enhanced, secure digital solutions.«
The card issuance process

In offering these solutions, we want to transform the way payment cards are personalized and issued to end customers – eliminating inefficiencies and waste, and moving to sustainable sources or embracing digital tools to reduce paper usage during the process of card issuance:

The traditional manufacture and issuance model

In the traditional manufacture and card personalization process, the following steps take place:
No matter where you currently stand in the development of a sustainability strategy for your financial services, G+D is the best partner to help you create and drive your eco-innovation capabilities. With Convego® Beyond, we will define together the sustainable payment products, services, offerings and environmental partnerships that best fit your customers’ needs, and your company’s sustainable business strategy – moving beyond just a green card.

»Embedding eco-innovation into your operations and product portfolio strategy will enhance your credibility and reputation in the industry. It will also guide your customer acquisition among the growing eco-conscious customer groups.«

The eco-innovation card manufacture and personalization process
Moving to a more sustainable, digital-first production model benefits your business and the environment:

1. Manufacture
   PLA card is manufactured

2. Transport
   Card and collateral material is transported to personalization bureau

3. Personalization
   Cards are personalized and full color branding is printed onto paper and inserted into envelopes

4. Delivery
   Card packs are transported to the consumer’s house

5. Activation
   Customer is sent an electronic PIN via digital channels same day as card

6. End of Life
   We work with issuers to provide a safe, sustainable and secure recycling and disposal solution, tailored to the issuer’s geography and specific needs.

- Reduced paper usage
- Less pollution
- More sustainable delivery
- State of the art user experience
- Secure
**G+D: Powering global payment innovation**

<table>
<thead>
<tr>
<th><strong>33</strong></th>
<th><strong>20+</strong></th>
<th><strong>&gt;18</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>countries in the world with G+D presence</td>
<td>certified production and personalization sites and data centers worldwide</td>
<td>trusted by more than 18 of the world’s leading financial service institutions to manage their digital issuance services</td>
</tr>
<tr>
<td><strong>400m</strong></td>
<td><strong>20m</strong></td>
<td></td>
</tr>
<tr>
<td>personalized cards produced globally every year</td>
<td>virtual payment cards enabled over the past 5 years</td>
<td></td>
</tr>
<tr>
<td><strong>+17%</strong></td>
<td><strong>76</strong></td>
<td></td>
</tr>
<tr>
<td>increase in patents granted to G+D</td>
<td>subsidiaries and joint ventures</td>
<td></td>
</tr>
</tbody>
</table>
Creating confidence

Giesecke+Devrient (G+D) is a global security technology group headquartered in Munich. As a trusted partner to customers with the highest demands, G+D secures the essential values of the world with its solutions. The company develops technology with passion and precision in four major playing fields: payment, connectivity, identities and digital infrastructures.

G+D was founded in 1852. In the fiscal year 2021, the company generated a turnover of 2.38 billion euros with around 11,800 employees. G+D is represented by 81 subsidiaries and joint ventures in 33 countries. Further information: www.gi-de.com.